



Northrop Grumman Systems Corporation
5000 U.S. 1 North
St. Augustine, FL 32095

August 21, 2012

Mr. Bheem Kothur, P.E.
Florida Department of Environmental Protection
Hazardous Waste Regulation Section, MS 4560
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Report on the Effectiveness of Corrective Actions (ROECA) at:
Reporting Period: February 1 to July 31, 2012
Northrop Grumman Systems Corporation –
St. Augustine Manufacturing Center
EPA Facility I.D. No. FLD 046 771 952

Dear Mr. Kothur:

Enclosed is the referenced report (one hard copy and one CD with the entire report, including appendices and WACS Adapt deliverables). An electronic copy (CD) of this report has also been sent to the FDEP-District office and the EPA. This report contains a summary and interpretation of current data, information generated during the reporting period, and proposed monitoring wells that will be sampled during the Groundwater Assessment Program (GAP) in 2013 (see Table 7 in the ROECA).

The development of the GAP was based on an evaluation of recent and historical water-quality data and other factors in the decision flow chart dated January 14, 2008 and approved by the FDEP on February 19, 2008. Except for the sampling frequency at RFI-S10 (changed from semiannual to annual monitoring), the sampling locations, sampling procedures, analytical methods, water-level monitoring, and routine inspection, monitoring, and maintenance on the Correction Action System (CAS) and Water Conservation Plant (WCP) will remain the same as in 2012. The next sampling

Mr. Bheem Kothur, P.E.

Page 2

event is scheduled for January 21 and 22, 2013; therefore, your review and approval is respectfully requested.

Please contact the undersigned or Fred Seguiti with Environmental Management & Global Innovations, Inc. (fseguiti@emagin-inc.com) if you have any questions or comments, or if we can be of further assistance.

Sincerely,



Richard Doria, P.E.
Manager - Facilities & ESHM
Northrop Grumman Systems Corporation

Attachments

cc: Fred A. Seguiti, Environmental Management & Global Innovations, Inc.
FDEP- District office (1 CD with complete report in pdf format)
EPA-Region 4 (1 CD with complete report in pdf format)



**REPORT ON THE EFFECTIVENESS OF
CORRECTIVE ACTION
FEBRUARY 1 TO JULY 31, 2012**

Prepared for:

**Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center
I.D. Number: FLD 046 771 952**

August 2012

Prepared by:

**EMAGIN
Environmental Management & Global Innovations, Inc.
3820 Northdale Boulevard, Suite 210 B
Tampa, Florida 33624
(813) 968-7722**

Environmental Management & Global Innovations, Inc.

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REPORT ON THE EFFECTIVENESS OF
CORRECTIVE ACTION
NORTHROP GRUMMAN SYSTEMS CORPORATION
ST. AUGUSTINE MANUFACTURING CENTER
I.D. Number: FLD 046 771 952

August 2012

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


Fred A. Seguiti NoP303
Principal Hydrogeologist/Vice President
Professional Geologist No. 0013

8/24/12

Date

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
Certification.....	i
1.0 Introduction	1-1
1.1 Site Summary	1-2
2.0 Work Performed During this Monitoring Period (February 1 to July 31, 2012)	2-1
2.1 Data Quality / Validation	2-3
3.0 Summary and Conclusions	3-1
4.0 Work Planned for Next Monitoring Period (August 1, 2012 to January 31, 2013)	4-1

Tables

1. Groundwater Withdrawal by Recovery Well (February - July 2012)
2. Mass Removed by CAS (September 1993 - July 2012)
3. WCP Influent and Effluent Values for Detected Analytes (February - July 2012)
4. Water Levels, January and July 2012
5. Field Parameter Measurements, July 11, 2012
6. Summary of Analytes Detected in Groundwater (July 2007 - July 2012)
7. Proposed Well Sampling Matrix for 2013 GAP

Figures

1. Site Map
2. Concentrations of Vinyl Chloride in Effluent Samples from the CAS
(September 1993 – July 2012)
3. Concentrations of 1,4-Dioxane in Effluent Samples from the CAS (September 1993 - July 2012)
4. Groundwater Elevation Contours / Shallow Zone (0-18 ft bls) (July 11, 2012)
5. Groundwater Elevation Contours / Lower Zone (18-30 ft bls) (July 11, 2012)
6. Groundwater Concentrations Lower Zone (18-30 ft bls) (July 2010 to July 2012)

Appendices

- A. Recovery Well Laboratory Analytical Data
 - B. Water Conservation Plant Laboratory Analytical Data.....
 - C. Monitor Well Laboratory Analytical Data
 - D. Groundwater Sampling Logs/Field Forms
 - E. Groundwater Concentration Trend Plots
- A-1
B-1
C-1
D-1
E-1



1.0 INTRODUCTION

Pursuant to Conditions IV.8 and IV.10 of the Corrective Action Permit Number 072590-HH-002, issued February 11, 2011, this semi-annual Report on the Effectiveness of Corrective Action (ROECA) covers the reporting period from February 1 to July 31, 2012. This report contains a summary and interpretation of current inspection, maintenance and groundwater monitoring data, and information generated during the reporting period. As agreed during a teleconference between the Florida Department of Environmental Protection (FDEP), Northrop Grumman Systems Corporation (NGSC), and Environmental Management and Global Innovations, Inc. (EMAGIN) personnel on August 13, 2007, general information pertaining to the regulatory history, hydrogeology, and routine or unchanging aspects of the corrective action system (CAS) and water conservation plant (WCP) are not included herein.

A RCRA Facility Investigation (RFI) was conducted on a facility-wide basis that included assessment of groundwater in the shallow and lower zones. The results of the RFI indicated that vinyl chloride and 1,4-dioxane were the most prevalent of the constituents detected; impacted groundwater was present within the property boundaries of the facility. The locations of the RFI monitoring wells and recovery wells (RW) are presented in Figure 1. After completing a corrective measures study (CMS), groundwater recovery and treatment was selected to: 1) prevent further migration of groundwater containing dissolved volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) concentrations greater than applicable groundwater cleanup target levels (GCTLs) provided in Table I of Chapter 62-777, of the Florida Administrative Code (FAC); 2) capture groundwater containing dissolved VOCs and SVOCs at concentrations greater than applicable GCTLs; and 3) treat recovered groundwater.



1.1 Site Summary

Facility Name:	Northrop Grumman Systems Corporation St. Augustine Manufacturing Center
Address:	5000 U.S. 1 North St. Augustine, Florida 32095
Northrop Grumman Project Manager:	Dawn Sielaff
Facility I.D. Number:	FLD 046 771 952
Corrective Action Permit Number:	072590-HH-002
Current Phase of Project	Groundwater Remediation
Current Remediation Techniques:	Groundwater Recovery and Treatment via RW-4 and RW-6, pretreatment of recovered groundwater in the WCP and discharge to City of St. Augustine publicly-owned treatment works (POTW)
Frequency of Groundwater Monitoring:	Semi-annual in accordance with Groundwater Assessment Program (GAP) Report approved June 23, 1999 (most recent revision on October 19, 2011)
Number of Monitor Wells in GAP:	Semi-Annual: 6 wells Annual: 8 wells
Approximate Depth to Groundwater:	2 – 5 feet below land surface (ft bls) (July 2012)
Groundwater Gradient (Horizontal Direction):	Predominantly to the north/northeast influenced by operating recovery wells
Groundwater Gradient (Vertical Direction):	Varied, but slight either way

2.0 WORK PERFORMED DURING THIS MONITORING PERIOD

(February 1 to July 31, 2012)

Below is a summary of work performed during the current monitoring period.

- Submitted an annual ROECA in March 2012 covering the monitoring period from August 1, 2011 to January 31, 2012. The ROECA included work planned for the next monitoring period. The FDEP concurred with the summary and conclusions of this report in a letter dated April 20, 2012.
- Inspected the CAS and recorded the operating data on weekdays during the reporting period, including: rainfall and the instantaneous and cumulative flow rates from the recovery wells and air stripper. Copies of data logs are maintained at the facility's Environmental, Safety, Health, & Medical Library. The monthly groundwater withdrawals by recovery wells RW-4 and RW-6 for this reporting period are provided in Table 1.
- Performed necessary maintenance and repairs on the CAS and WCP that included cleaning the recovery wells and replacing a recovery pump and high-level switch.
- Collected quarterly samples of the discharge from recovery wells RW-4 and RW-6 and combined effluent discharge on April 9 and July 11, 2012. The samples were analyzed for VOCs using U.S. Environmental Protection Agency (EPA) Method 8260B, SVOCs using EPA Method 8270C, and 1,4-Dioxane using EPA Method 8260SIM (plus isotope dilution). The combined effluent discharge from both of the recovery wells (influent to the WCP) is illustrated on Figure 2 (vinyl chloride) and Figure 3 (1,4-dioxane). The total mass of vinyl chloride, 1,4-dioxane, and 1,1 dichloroethane removed since the start-up of the CAS on September 23, 1993 is summarized in Table 2. The laboratory analytical reports are provided in Appendix A.

- Collected quarterly samples of the WCP influent and effluent discharge on April 9 and July 11, 2012 (Table 3). The samples were analyzed for VOCs using EPA Method 8260B, SVOCs using EPA Method 8270C, and 1,4-Dioxane using EPA Method 8260SIM. The laboratory analytical reports are provided in Appendix B.
- Obtained water level measurements on July 11, 2012 from 30 shallow-zone monitor wells, 30 lower-zone monitor wells, and 2 recovery wells (Table 4). Groundwater flow in the shallow and lower hydrologic zones of the surficial aquifer are illustrated in Figure 4 and Figure 5, respectively.
- Determined sediment accumulation in the 30 shallow and 30 lower-zone monitor wells by comparing the observed depth of the well with the depth reported when the well was installed (Table 4). For the monitor wells that were also sampled, the depth of the well was measured after groundwater sampling was conducted.
- Collected semi-annual groundwater samples from 6 lower-zone monitor wells (RFI-S7, -S9, -S10, -S13, -S16, and -S17) on July 11, 2012. Monitoring of shallow-zone wells ceased in 2009 because the compounds of concern (COCs) were below laboratory detection limits and the decision criteria to stop sampling have been satisfied. All of the samples were analyzed for VOCs using EPA Method 8260B except for RFI-S9; this sample was only analyzed for 1,4-dioxane using EPA Method 8260SIM. Samples collected from monitor well RFI-S13 were also analyzed for 1,4-dioxane. An equipment blank sample and a field duplicate sample were also collected at RFI-S13. Sampling activities and quality assurance / quality control procedures were conducted in accordance with Chapter 62-160, FAC and the FDEP's Standard Operating Procedures (DEP-SOPs-001/01). Field parameters measured during well sampling included temperature, pH, turbidity, specific conductance, dissolved oxygen, and oxidation reduction-potential (ORP) (Table 5). The laboratory analytical reports are provided in Appendix C. The sampling logs and related field forms are provided in Appendix D. A summary of the detected analytes is provided in Table 6

and the VOC (vinyl chloride and 1,4-dioxane) concentrations in the samples from the lower-zone wells are illustrated on Figure 6.

- Purge water from the well sampling effort (approximately 6.1 gallons) was containerized into 5-gallon buckets and discharged directly into the industrial waste water treatment plant (IWWTP).

2.1 Data Quality / Validation

The analytical results from the July 2012 sampling event were reported by the laboratory, TestAmerica – Tallahassee, in a single data package (640-39444-1). As indicated in the report, all samples were received by the laboratory in acceptable condition and properly preserved. No errors, omissions, or discrepancies were noted on the chain-of-custody (COC) form. One equipment blank and one trip blank were collected during this sampling event. No target analytes were detected in either these two blanks, indicating that sample collection and handling procedures used by field staff were acceptable. One groundwater sample (RFI-S13) was collected in duplicate. The analytical results for this sample-duplicate pair indicated acceptable cumulative precision (field and laboratory) for all analytes. No target analytes were detected in any laboratory method blanks. All surrogate recoveries in the analyses for volatile organic compounds (VOCs) were within laboratory control limits.

Elevated recoveries were reported for 2-chloroethylvinyl ether in the analyses of both the laboratory control sample (LCS) and the LCS duplicate (LCSD). No detections of 2-chloroethylvinyl ether were reported in any field samples. Although qualified by the laboratory, findings of non-detect do not require qualification, as any positive analytical bias is believed to have not precluded detection of the affected analytes. Analytes detected at concentrations of between the method detection limit (MDL) and practical quantitation limit (PQL) were properly qualified by the laboratory as estimates (i.e., coded with an "I"). All other laboratory quality control (QC) data met data review acceptance criteria, with no sample results requiring qualification. Completeness in terms of usable data is 100%.

3.0 SUMMARY AND CONCLUSIONS

- Average monthly recovery rates during the reporting period are summarized in Table 1 and are consistent with previous reporting periods. The averaged recovery rates for RW-4 and RW-6 for this reporting period were 3.6 and 15.9 gallons per minute (gpm), respectively. The CAS and WCP (the system) operated nearly continuously during the reporting period except for the events summarized below.

DATE	REASON FOR SHUT DOWN	ACTION/OUTCOME
February 21, 2012	RW-6 pump broken	Replaced with new pump after 40 hour shutdown
February 27, 2012	Clean RW-6	RW-6 back in service after 24 hour shutdown
April 2, 2012	High level alarm at air stripper	Alarm reset and system back in service after 24 hour shutdown
April 4, 2012	Clean RW-6	System back in service after 24 hour shutdown
April 9, 2012	High level alarm at air stripper	Alarm reset and system back in service after 72 hour shutdown
April 11, 2012	Replace bad high level switch float	System back in service after 24 hour shutdown
May 22, 2012	Clean RW-6	System back in service after 24 hour shutdown
May 30, 2012	Clean RW-6	System back in service after 30 hour shutdown

- Total mass removal to date of vinyl chloride (27.1 pounds [lbs]), 1,4 dioxane (3.7 lbs) and 1,1-DCA (4.3 lbs) was calculated using the average concentration in the discharge from the CAS (currently the combined flow from RW-4 and RW-6 as illustrated in Figure 2 and 3) and the total volume of water treated to July 2012. As of July 2012, a total of 146,048,146 gallons of groundwater have been treated since the CAS was started in 1993. For the reporting period from February 1 to July 31, 2012, a total of 5,780,837

gallons of groundwater were removed. Vinyl chloride concentration in the effluent from the CAS has been trending lower since RW-6 was brought on line in September 2003.

- The WCP was effective in removing the constituents of concern in the recovered groundwater to less than their respective GCTLs (Table 3). All of the treated groundwater was either discharged to the City of St. Augustine's POTW or reused as facility demands dictates.
- The depth to water measured during July 2012 in both the shallow and lower zone wells (excluding the operating recovery wells) ranged from approximately 2 to 5 ft bls. The groundwater flow direction in both hydrologic zones is generally toward the north/northeast and is consistent with historical information. Natural groundwater flow in the shallow surficial aquifer (prior to pumping associated with the CAS) was towards the marsh areas and the Intracoastal Waterway located north and northeast of the site. A comparison of 21 paired (excludes two well pairs within the cone of depression created by RW-6) shallow and lower zone wells indicates a net downward gradient of groundwater flow (0.05 ft or more); two pairs indicated an upward gradient, eight pairs indicated a neutral gradient, and eleven pairs indicated a slight downward gradient.
- The observed depth to the bottom of 21 monitor wells was shallower than the reported depth possibly due to sediment accumulating in the wells. The difference, however, was less than 1 ft (ranging from 0.01 to 0.9 ft), except for well RFI-WT3, RFI-S8, MW-1, and NDW-1, which had a difference greater than 1 ft.
- The zone of influence created on July 11, 2012 by operating RW-4 and RW-6 at the recovery rates of approximately 4.5 and 18.9 gallons per minute, respectively, is illustrated on Figure 4 (shallow hydrologic zone) and Figure 5 (lower hydrologic zone). Based on these data and the groundwater elevations measured near the recovery wells,

the capture area appears to be sufficient to contain the area of impacted groundwater within the surficial aquifer.

- Three (RFI-S7, -S13, and -S17) of six groundwater samples contained one or more VOCs (or 1,4-dioxane) detected above the laboratory reporting limit (RL). Vinyl chloride was detected in samples collected at RFI-S13, -S16, and -S17 at concentrations above its GCTL of 1 microgram per liter ($\mu\text{g}/\text{L}$). The 1,4-dioxane concentration was above its GCTL of 3.2 $\mu\text{g}/\text{L}$ in samples collected at RFI-S13, but below its GCTL at samples collected at RFI-S9. Five of the above mentioned groundwater samples (RFI-S9, -S10, -S13, -S16, and -S17) were collected in the central portion of the facility and one of the samples (RFI-S7) was collected near or between RW-4 and RW-6.
- In general, the vinyl chloride and 1,4-dioxane concentrations reported for the July 2012 sampling event were consistent with the historical data. In comparing the analytical results from the July 2012 sampling event to that of the January 2012 and July 2011 sampling events, the concentration of the COCs was lower at three wells (RFI-S7, -S9, and -S16), the same (concentrations below RLs) at one well (RFI-S10), and higher at one well (RFI-S17). At RFI-S13, the vinyl chloride concentration was lower and 1,4-dioxane concentration was slightly higher.

Time versus concentration graphs are provided in Appendix E. A trend/regression analysis was performed on data sets from wells with multiple sampling events and at least some of the results above the GCTL. In general, the analysis indicates decreasing trends for all of the wells since 1996. At RFI-S17, vinyl chloride concentrations were increasing between 2003 and 2006 (after pumping was initiated at RW-6 in 2003). Since 2006, the vinyl chloride concentration has been decreasing. The concentration of vinyl chloride at RFI-S17 continues to fluctuate and was reported at its highest level in this recent sampling event. However, as discussed above, the capture area created by



operating recovery wells RW-4 and RW-6 appears to be sufficient to contain the impacted groundwater in the vicinity of RFI-S17.

Based on the current groundwater quality data, water-level measurements, and CAS operating data, the existing CAS and GAP (as modified) are appropriate for accomplishing the corrective action remedy.

4.0 WORK PLANNED FOR NEXT MONITORING PERIOD

(August 1, 2012 to January 31, 2013)

- Continue routine inspection, monitoring, and maintenance, and repairs on the CAS and WCP, as needed.
- Collect quarterly samples of the discharge from recovery wells RW-4 and RW-6 and combined effluent discharge.
- Collect quarterly samples of the WCP influent and effluent discharge.
- Measure groundwater levels at 2 recovery wells, 30 shallow-zone monitor wells, and 30 lower-zone monitor wells.
- Redevelop well RFI-WT3, RFI-S8, MW-1, and NDW-1 to remove accumulated sediments in the well.
- Collect groundwater samples in January 2013 from selected monitor wells that are sampled on an annual basis as identified in Table 7. Perform sampling activities and quality assurance / quality control procedures in accordance with Chapter 62-160, FAC and the DEP-SOPs-001/01. Measure field parameters during well sampling including temperature, pH, turbidity, specific conductance, dissolved oxygen, and ORP.

The samples requiring VOC analyses will be analyzed using EPA Method 8260B and the samples requiring SVOC (1,4-dioxane) will be analyzed using FDEP-recommended EPA Method 8260SIM (plus isotope dilution).



TABLES

Table 1. Groundwater Withdrawal by Recovery Well
February - July 2012

Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center

Month	Volume (gallons)			Averaged Monthly Recovery Rate (gpm)		
	RW-4	RW-6	TOTAL	RW-4	RW-6	TOTAL
February 2012	149,325	742,627	891,952	3.20	16.10	19.30
March 2012	164,319	751,165	915,484	3.50	15.80	19.30
April 2012	134,185	645,459	779,644	2.40	11.60	14.00
May 2012	183,740	693,380	877,120	4.00	15.00	19.00
June 2012	222,235	934,304	1,156,539	4.70	19.70	24.40
July 2012	213,881	946,217	1,160,098	3.80	17.00	20.80
Period Average	177,948	785,525	963,473	3.60	15.87	19.47

gpm = gallons per minute

Table 2. Mass Removed by CAS
September 1993 - July 2012

Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center

Analyte	Amount Removed (lbs)	Average Concentration (ug/L)
1,1-Dichloroethane	4.3	3.5
1,4-Dioxane	3.7	3.0
Vinyl Chloride	27.1	22.00

lbs = pounds

ug/L = micrograms per liter

Table 3. WCP Influent and Effluent Values for Detected Analytes
February - July 2012

**Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center**

Analyte	Influent (ug/L)	Effluent (ug/L)	Percent Removed (%)
April 9, 2012			
1,1-Dichloroethane	0.0	0.0	NA
1,4-Dioxane	0.0	0.0	NA
Vinyl Chloride	4.0	0.0	100
July 11, 2012			
1,1-Dichloroethane	0.25	0.0	100
1,4-Dioxane	0.0	0.0	NA
Vinyl Chloride	2.5	0.0	100

ug/L = micrograms per liter

NA = Not Applicable

Table 4. Water Levels
January and July 2012

Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center

Well Number	Well Depth (ft bwc)	Screened Interval (ft bsl)	Casing Elevation (ft above NGVD)	X -Coordinate	Y -Coordinate	Depth to Water 1/24/12	Water Elevation (ft above NGVD) 1/24/12	Total Depths 1/24/12	Depth to Water 7/11/12	Water Elevation (ft above NGVD) 7/11/12	Total Depths 7/11/12
Background											
RFI-BGWT1	15	2.5 - 15	12.63	546694.70	2044948.28	7.54	5.09	17.89	5.34	7.29	17.87
RFI-BGS1	30	20 - 30	12.54	546694.66	2044952.28	7.45	5.09	32.80	5.26	7.28	32.84
RFI-BGWT2	15	2.5 - 15	13.87	547398.71	2043846.38	7.96	5.91	17.65	6.38	7.49	17.66
RFI-BGS2	30	20 - 30	13.91	547398.71	2043846.38	8.15	5.76	32.28	6.50	7.41	32.30
RFI-BGWT3	15	2.5 - 15	11.59	547764.24	2044313.86	6.47	5.12	17.58	5.73	5.86	17.60
RFI-BGS3	30	20 - 30	11.80	547762.93	2044318.69	6.74	5.06	32.30	5.83	5.97	32.28
Facility											
RFI-WT1	15	2.5 - 15	10.65	547176.65	2046082.63	6.80	3.85	18.12	5.39	5.26	18.1
RFI-S1	30	20 - 30	10.25	547178.14	2046078.01	6.76	3.49	32.88	4.97	5.28	32.97
RFI-WT2	15	2.5 - 15	10.42	547066.66	2045749.90	6.68	3.74	14.72	5.52	4.90	14.54
RFI-S2	30	20 - 30	10.63	547063.20	2045755.28	6.86	3.77	32.50	5.64	4.99	32.50
RFI-WT3	15	2.5 - 15	12.37	546958.64	2045524.75	8.23	4.14	14.97	6.86	5.51	12.88
RFI-S3	30	20 - 30	12.39	546964.17	2045525.90	8.42	3.97	33.09	6.98	5.41	33.05
RFI-WT4	15	2.5 - 15	12.33	-	-	-	-	-	-	-	-
RFI-S4	30	20 - 30	12.44	547086.32	2045560.92	8.45	3.99	32.69	6.98	5.46	32.72
RFI-WT5	15	2.5 - 15	11.33	547124.61	2045576.85	*4	-	5.03	*4	-	-
RFI-S5	30	20 - 30	-	-	-	7.57	-	32.30	6.21	-	32.27
RFI-S6	30	20 - 30	10.36	547209.73	2045529.30	6.61	3.75	32.60	5.14	5.22	32.60
RFI-S7	30	20 - 30	11.21	547235.40	2045498.85	7.45	3.76	32.13	5.76	5.45	32.40
RFI-WT8	15	2.5 - 15	9.10	547191.87	2045402.97	5.62	3.48	15.29	4.17	4.93	15.25
RFI-S8	30	20 - 30	9.02	547190.99	2045405.00	5.54	3.48	26.52	4.08	4.94	26.56
RFI-WT9	15	2.5 - 15	10.33	547154.07	2045308.62	6.53	3.80	15.30	4.87	5.46	15.32
RFI-S9	30	20 - 30	10.28	547160.25	2045309.87	6.38	3.90	29.73	4.91	5.37	29.70
RFI-WT10	15	2.5 - 15	11.03	547276.66	2045362.01	8.07	2.96	18.03	6.56	4.47	18.08
RFI-S10	30	20 - 30	10.96	547271.80	2045359.98	8.70	2.26	32.90	7.28	3.68	32.96
RFI-WT11	15	2.5 - 15	8.99	547429.12	2045427.03	5.03	3.96	14.81	3.41	5.58	14.85
RFI-S11	30	20 - 30	8.89	547430.95	2045420.44	4.90	3.99	29.78	3.35	5.54	29.80
RFI-WT12	15	2.5 - 15	9.77	546906.61	2045016.96	5.27	4.50	14.81	3.43	6.34	14.80
RFI-S12	30	20 - 30	9.76	546900.35	2045015.41	5.38	4.38	30.20	3.75	6.01	30.18
RFI-WT13	15	2.5 - 15	10.34	547101.19	2045114.45	5.41	4.93	14.37	3.89	6.45	14.36
RFI-S13	30	20 - 30	10.32	547096.87	2045115.10	6.08	4.24	29.91	4.62	5.70	29.94
RFI-WT14	15	2.5 - 15	9.65	547126.82	2044758.47	4.38	5.27	14.67	3.44	6.21	-
RFI-S14	30	20 - 30	9.76	547128.32	2044762.50	4.33	5.43	30.01	3.54	6.22	29.99
RFI-WT15	15	2.5 - 15	10.17	547215.62	2044920.29	5.40	4.77	14.80	4.20	5.97	14.80
RFI-S15	30	20 - 30	10.15	547216.83	2044917.03	4.70	5.45	30.38	4.28	5.87	30.30
RFI-WT16	15	2.5 - 15	11.35	547345.17	2045096.45	6.62	4.73	17.86	5.76	5.59	17.85
RFI-S16	30	20 - 30	11.17	547344.70	2045101.80	6.89	4.28	32.75	5.57	5.60	32.84
RFI-WT17	15	2.5 - 15	11.73	547435.01	2044923.18	6.49	5.24	17.78	6.06	5.67	17.80
RFI-S17	30	20 - 30	11.77	547436.07	2044930.19	7.26	4.51	32.80	6.09	5.68	32.80
RFI-S18	30	20 - 30	9.36	547133.90	2044648.25	4.09	5.27	29.14	2.67	6.69	29.11
RFI-WT19	15	2.5 - 15	8.88	547305.25	2044745.43	3.94	4.94	15.45	2.74	6.14	15.40
RFI-S19	30	20 - 30	8.94	547309.15	2044746.67	4.32	4.62	30.05	2.85	6.09	30.03
RFI-WT21	15	2.5 - 15	9.87	547034.43	2046191.04	6.10	3.77	17.94	5.11	4.76	17.80
RFI-S21	30	20 - 30	9.87	547032.41	2046194.17	6.17	3.70	32.07	5.32	4.55	32.11
RFI-WT22	15	2.5 - 15	11.27	-	-	7.79	3.48	17.95	7.58	3.69	18.00
RFI-S22	30	20 - 30	11.41	-	-	7.96	3.45	29.03	7.72	3.69	29.10
RFI-WT23	15	2.5 - 15	8.76	546806.19	2045747.30	3.84	4.92	14.26	3.53	5.23	14.29
RFI-S23	30	20 - 30	8.76	546806.19	2045747.30	3.93	4.83	29.08	3.58	5.18	29.10
SWMU5 / MW1	14.5	2.5 - 14.5	10.65	547170.99	2045918.12	6.98	3.67	18.00	5.37	5.28	18.03
SWMU5 / MW2	14.5	2.5 - 14.5	11.44	547111.00	2045960.32	7.90	3.54	18.03	6.52	4.92	18.06
SWMU7 / MW1	14.5	2.5 - 14.5	11.41	547235.38	2045497.85	7.57	3.84	18.02	5.86	5.55	18.02
AOC-B / MW1	14.5	2.5 - 14.5	10.64	547204.16	2045690.29	7.00	3.64	17.08	5.39	5.25	17.11
AOC-B / MW2	14.5	2.5 - 14.5	10.79	547214.00	2045515.00	7.14	3.65	18.00	5.53	5.26	17.98
RW-4	35	5 - 35	7.87	547307.87	2045836.71	12.95	-5.08	13.55 ²	6.04	1.83	13.65 ²
RW-6	35	5 - 35	9.54	547297.99	2045473.07	13.16	-3.62	23.80 ¹¹	12.52	-2.98	21.46 ¹¹
BW-1	20.03	-	10.96	547731.61	2045158.11	5.44	5.52	20.10	4.78	6.18	20.11
BW-2	40.78	17.3-37.3	10.67	547524.20	2045309.62	5.58	5.09	40.92	4.98	5.69	40.97
PZ-S1	30	20-30	8.92	547710.81	2045259.70	3.40	5.52	29.85	2.82	6.10	29.88
PZ-S2	30	20-30	9.34	547710.81	2045259.70	3.83	5.51	29.66	3.50	5.84	29.70
PZ-WT3	15	5-15	9.21			3.70	5.51	14.73	3.38	5.83	14.75
MW-1	17.7	4.8-14.8	10.22	547307.75	2045796.30	5.91	4.31	14.33	5.17	5.05	14.80
NDW-1	100.5	-	8.97	547589.19	2045775.26	3.04	5.93	98.02	1.92	7.05	98.00
AW-2A	18	5-15	10.55	547492.81	2045906.87	5.48	5.07	18.27	4.63	5.92	18.34
AW-2B	39.1	-	9.92	547492.81	2045906.87	-	-	-	-	-	-
AW-8A ³	14.45	-	8.52	--	--	-	-	-	-	-	-
AW-8B ³	23.52	15-35	7.51	--	--	-	-	-	-	-	-
AW-10A	15.21	3-13	10.15	457414.04	2046038.43	6.21	3.94	14.88	4.35	5.80	14.94
AW-10B	35.25	17-37	10.96	457414.04	2046038.43	7.06	3.90	40.08	5.32	5.64	40.02

Total depth of well and depth to water are in feet below the top of the well casing.

Casing elevations and water elevations are referenced to feet above NGVD.

Casing elevations determined by a professional surveyor in February, April 1994, and in May 2008.

Wells with "WT" preceding the well number are screened in the upper zone (2.5 to 15 ft bsl).

Wells with "S" preceding the well number are screened in the lower zone (20 to 30 ft bsl).

All SWMU wells and AOC wells are screened in the upper zone (2.5 to 15 ft bsl).

Recovery wells RW-4 and RW-6 have screened intervals encompassing both the upper and lower zones.

ft bwc = feet below top of well casing

- not measured

¹ RW-6, unable to get water level probe past ~23 ft due to pump/hose downhole obstructions.

² RW-4, unable to get water level probe past ~14 ft due to pump/hose downhole obstructions.

³ wells located on runway, unable to access.

⁴ obstruction, broken PVC at 4' to 5' down hole.

Table 5. Field Parameter Measurements
July 11, 2012

Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center

Well Number	Total Depth of Well (ft bwc)	Screened Interval (ft bls)	pH (S.U.)	Specific Conductance (mmhos/cm)	Temperature (°C)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mV)
RFI-S7	32.13	20-30	6.09	0.505	26.08	4.17	1.35	-165.4
RFI-S9	29.73	20-30	7.20	0.532	29.44	5.03	0.40	-205.3
RFI-S10	32.90	20-30	6.83	0.427	27.59	5.90	0.65	-149.3
RFI-S13	29.91	20-30	7.08	0.785	30.45	2.99	0.35	-205.1
RFI-S16	32.75	20-30	6.88	0.658	26.80	0.93	0.44	-128.3
RFI-S17	32.80	20-30	7.25	0.902	27.08	6.03	0.45	-145.8

ft bwc feet below top of well casing

ft bls feet below land surface

S.U. standard units

mmhos/cm millimhos per centimeter

°C degrees Celsius

NTU nephelometric turbidity units

mg/L milligrams per liter

mV millivolts

Table 6. Summary of Analytes Detected in Groundwater
July 2007 - January 2012

Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center

Well Number	Screened Interval	Sample Date	1,1-Dichloroethane (70 ug/L)	1,2-Dichlorobenzene (600 ug/L)	1,3-Dichlorobenzene (210 ug/L)	1,4-Dichlorobenzene (75 ug/L)	Benzene (1 ug/L)	Chlorobenzene (100 ug/L)	cis-1,2-Dichloroethene (70 ug/L)	Toluene (40 ug/L)	trans-1,2-Dichloroethene (100 ug/L)	Vinyl chloride (1 ug/L)	Xylenes- Total (20 ug/L)	1,4-Dioxane (3.2 ug/L)
RFI-WT1	2.5 - 15	2/27/2008 1/29/2009	0.067 U 0.10 U	0.076 U 0.17 U	0.082 U 0.10 U	0.14 U 0.18 U	0.058 U 0.18 U	0.079 U 0.18 U	0.18 U 0.17 U	0.12 I 0.95 I	0.25 U 0.19 U	0.058 U 0.16 U	0.11 U 0.36 U	NA
RFI-S1	20-30	2/27/2008 1/29/2009 1/26/2010 1/25/2011 1/23/2012	0.067 U 0.10 U 0.18 U 0.18 U 0.18 U	0.076 U 0.17 U 0.18 U 0.18 U 0.18 U	0.082 U 0.10 U 0.21 U 0.21 U 0.21 U	0.14 U 0.18 U 0.19 U 0.19 U 0.19 U	0.058 U 0.18 U 0.28 U 0.28 U 0.28 U	0.079 U 0.18 U 0.27 U 0.27 U 0.27 U J	0.18 U 0.17 U 0.22 U 0.22 U 0.22 U J	0.11 I 1.7 0.24 U 0.24 U 0.24 U J	0.25 U 0.19 U 0.25 U 0.25 U 0.25 U	0.058 U 0.16 U 0.29 U 0.29 U 0.29 U	0.11 U 0.36 U 0.68 U 0.68 U 0.68 U	NA
RFI-S2	20 - 30	7/11/2007	0.067 U	0.076 U	0.082 U	0.14 U	0.058 U	0.079 U	0.18 U	0.063 U	0.25 U	0.058 U	0.11 U	2.4 U
RFI-S4	20 - 30	7/11/2007	0.067 U	0.076 U	0.082 U	0.14 U	0.058 U	0.079 U	0.18 U	0.063 U	0.25 U	0.058 U	0.11 U	2.4 U
RFI-WT5	2.5 - 15	7/11/2007	0.067 U	0.076 U	0.082 U	0.14 U	0.058 U	0.079 U	0.18 U	0.063 U	0.25 U	0.058 U	0.11 U	2.4 U
RFI-S6	20 - 30	2/26/2008 1/29/2009 1/26/2010 1/25/2011 1/23/2012	0.067 U 0.10 U 0.18 U 0.18 U 0.18 U	0.076 U 0.17 U 0.18 U 0.18 U 0.18 U	0.082 U 0.10 U 0.21 U 0.21 U 0.21 U	0.14 U 0.18 U 0.19 U 0.19 U 0.19 U	0.067 I 0.18 U 0.28 U 0.28 U 0.28 U	0.20 I 0.18 U 0.27 U 0.27 U 0.27 U J	0.18 U 0.17 U 0.22 U 0.22 U 0.22 U J	0.14 I 0.73 I 0.24 U 0.24 U 0.24 U	0.25 U 0.19 U 0.25 U 0.25 U 0.25 U	6.5 3.5 1.4 0.71 I 0.29 U	0.11 U 0.36 U 0.68 U 0.68 U 0.68 U	2.8 0.54 U 1.4 1.6 I 1.0 U
RFI-S7	20 - 30	7/10/2007 2/26/2008 7/22/2008 1/29/2009 7/21/2009 1/26/2010 7/21/2010 1/25/2011 7/12/2011 1/23/2012 7/11/2012	4.7 1.7 1.6 0.10 U 0.10 U 0.18 U 0.91 I 0.90 I 1.5 0.18 U 0.20 U	0.076 U 0.082 U 0.17 U 0.17 U 0.17 U 0.18 U 0.18 U 0.21 U 0.21 U 0.21 U 0.14 U	0.082 U 0.14 U 0.18 U 0.18 U 0.18 U 0.19 U 0.19 U 0.21 U 0.21 U 0.21 U 0.17 U	0.14 U 0.14 U 0.18 U 0.18 U 0.18 U 0.19 U 0.19 U 0.19 U 0.19 U 0.19 U 0.20 U	0.11 I 0.087 I 0.18 U 0.18 U 0.18 U 0.28 U 0.28 U 0.28 U 0.28 U 0.28 U 0.13 U	0.079 U 0.079 U 0.18 U 0.18 U 0.18 U 0.27 U 0.27 U 0.27 U 0.27 U 0.27 U J 0.13 U	2.9 1.5 1.6 0.17 U 0.17 U 0.22 U 0.39 I 0.64 I 2.6 0.87 I J 0.46 I	0.063 U 0.73 I 0.19 U 0.75 I 0.24 U 0.24 U 0.24 U 0.24 U 0.24 U 0.14 U 0.14 U	1.8 1.3 0.97 I 0.19 U 0.24 U 0.25 U 0.25 U 0.25 U 0.81 I 0.39 I 0.39 I	2.0 3.5 1.7 0.63 I 1.6 12 10 12 0.65 I 0.22 U 0.22 U	0.11 U 0.44 I 0.36 U 0.36 U 0.68 U 0.68 U 0.68 U 0.68 U 0.68 U 0.44 U 0.44 U	NA
RFI-WT8	2.5 - 15	7/10/2007	0.067 U	0.076 U	0.082 U	0.14 U	0.058 U	0.079 U	0.18 U	0.063 U	0.25 U	0.058 U	0.11 U	2.4 U
RFI-S8	20 - 30	7/10/2007 2/27/2008 7/22/2008	0.067 U 0.067 U 0.10 U	0.076 U 0.082 U 0.17 U	0.082 U 0.14 U 0.10 U	0.14 U 0.058 U 0.18 U	0.058 U 0.079 U 0.18 U	0.079 U 0.18 U 0.18 U	0.18 U 0.14 I 0.17 U	0.063 U 0.46 I 0.19 U	0.36 I 0.19 I 0.20 I	0.058 U 0.11 U 0.16 U	0.11 U 0.24 U 0.36 U	NA
RFI-WT9	2.5 - 15	7/9/2007 2/27/2008 7/22/2008	0.067 U 0.067 U 0.10 U	0.076 U 0.076 U 0.17 U	0.082 U 0.082 U 0.10 U	0.14 U 0.058 U 0.18 U	0.058 U 0.079 U 0.18 U	0.079 U 0.18 U 0.18 U	0.18 U 0.063 U 0.17 U	0.063 U 0.25 U 0.19 U	0.25 U 0.058 U 0.16 U	0.058 U 0.11 U 0.36 U	0.11 U 0.24 U 0.26	2.5 U
		7/9/2007 2/27/2008 7/22/2008 1/29/2009 7/21/2009 1/26/2010 7/21/2010 1/24/2011 7/12/2011 1/23/2012 7/11/2012	0.067 U NA NA NA NA NA NA NA NA NA NA	0.076 U NA NA NA NA NA NA NA NA NA NA	0.082 U NA NA NA NA NA NA NA NA NA NA	0.14 U NA NA NA NA NA NA NA NA NA NA	0.058 U NA NA NA NA NA NA NA NA NA NA	0.22 I NA NA NA NA NA NA NA NA NA NA	0.18 U NA NA NA NA NA NA NA NA NA NA	0.063 U NA NA NA NA NA NA NA NA NA NA	0.25 U NA NA NA NA NA NA NA NA NA NA	0.058 U NA NA NA NA NA NA NA NA NA NA	0.11 U NA NA NA NA NA NA NA NA NA NA	2.8 I 3.9 3.5 2.3 3.8 2.7 5.5 2.6 3.3 Q, V 2.6 2.0

Table 6. Summary of Analytes Detected in Groundwater
July 2007 - January 2012

Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center

Well Number	Screened Interval	Sample Date	1,1-Dichloroethane (70 ug/L)	1,2-Dichlorobenzene (600 ug/L)	1,3-Dichlorobenzene (210 ug/L)	1,4-Dichlorobenzene (75 ug/L)	Benzene (1 ug/L)	Chlorobenzene (100 ug/L)	cis-1,2-Dichloroethene (70 ug/L)	Toluene (40 ug/L)	trans-1,2-Dichloroethene (100 ug/L)	Vinyl chloride (1 ug/L)	Xylenes- Total (20 ug/L)	1,4-Dioxane (3.2 ug/L)
RFI-WT10	2.5 - 15	7/9/2007	0.067 U	0.076 U	0.082 U	0.14 U	0.058 U	0.079 U	0.18 U	0.063 U	0.25 U	0.058 U	0.11 U	2.4 U
RFI-S10	20 - 30	7/9/2007	0.067 U	0.076 U	0.082 U	0.14 U	0.058 U	0.079 U	0.48 I	0.063 U	0.25 U	0.058 U	0.12 I	2.4 U
		2/27/2008	0.067 U	0.076 U	0.082 U	0.14 U	0.058 U	0.079 U	0.49 I	0.13 I	0.25 U	0.30 I	0.47 I	NA
		7/22/2008	0.10 U	0.17 U	0.10 U	0.18 U	0.18 U	0.18 U	0.79 I	0.19 U	0.19 U	0.47 I	0.36 U	NA
		1/29/2009	0.10 U	0.17 U	0.10 U	0.18 U	0.18 U	0.18 U	0.63 I	0.75 I	0.19 U	0.45 I	0.40 I	NA
		7/21/2009	0.10 U	0.17 U	0.10 U	0.18 U	0.18 U	0.18 U	0.55 I	0.19 U	0.19 U	0.16 U	0.36 U	NA
		1/26/2010	0.18 U	0.18 U	0.21 U	0.19 U	0.28 U	0.27 U	0.45 I	0.24 U	0.25 U	0.34 I	0.68 U	NA
		7/21/2010	0.18 U	0.18 U	0.21 U	0.19 U	0.28 U	0.27 U	0.22 U	0.24 U	0.25 U	0.29 U	0.68 U	NA
		1/24/2011	0.18 U	0.18 U	0.21 U	0.19 U	0.28 U	0.27 U	0.22 U	0.24 U	0.25 U	0.29 U	0.68 U	NA
		7/12/2011	0.18 U	0.18 U	0.21 U	0.19 U	0.28 U	0.27 U	0.22 U	0.24 U	0.25 U	0.29 U	0.68 U	NA
		1/23/2012	0.18 U	0.18 U	0.21 U	0.19 U	0.28 U	0.27 U J	0.22 U J	0.24 U	0.25 U	0.29 U	0.68 U	NA
		7/11/2012	0.20 U	0.14 U	0.17 U	0.20 U	0.13 U	0.13 U	0.21 U	0.14 U	0.26 U	0.22 U	0.44 U	NA
RFI-S13	20 - 30	7/10/2007	0.34 I	0.076 U	0.082 U	0.14 U	0.087 I	0.28 I	0.18 U	0.074 I	0.25 U	20	0.11 U	19
		2/26/2008	0.32 I	0.076 U	0.082 U	0.14 U	0.098 I	0.18 I	0.18 U	0.082 I	0.25 U	0.62 I	0.11 U	6.9
		7/21/2008	0.10 U	0.17 U	0.10 U	0.18 U	0.18 U	0.18 U	0.17 U	0.19 U	0.19 U	0.34 I	0.36 U	4.6
	DUP-1	1/29/2009	0.10 U	0.17 U	0.10 U	0.18 U	0.18 U	0.18 U	0.17 U	0.75 I	0.19 U	0.16 U	0.36 U	0.54 U
		1/29/2009	0.10 U	0.17 U	0.10 U	0.18 U	0.18 U	0.18 U	0.17 U	0.73 I	0.19 U	0.16 U	0.36 U	0.54 U
	DUP-1	7/21/2009	0.93 I	0.17 U	0.10 U	0.18 U	0.18 U	0.18 U	0.17 U	0.19 U	0.51 I	12	0.36 U	7.1
	DUP-1	7/21/2009	0.10 U	0.17 U	0.10 U	0.18 U	0.18 U	0.18 U	0.17 U	0.19 U	0.44 I	0.99 I	0.36 U	5.4
	DUP-1	1/26/2010	27	0.18 U	0.21 U	0.19 U	0.28 U	0.27 U	8.3	0.24 U	24	370	0.68 U	62
	DUP-1	1/26/2010	29	0.18 U	0.21 U	0.19 U	0.28 U	0.27 U	3.8	0.24 U	19	230	0.68 U	66
	DUP-1	3/10/2010	0.52 U	0.44 U	0.64 U	0.52 U	0.50 U	0.63 U	0.65 U	0.51 U	0.44 U	10	0.50 U	1.3
	DUP-1	7/21/2010	0.36 U	0.36 U	0.42 U	0.38 U	0.56 U	0.54 U	22	0.48 U	0.97 I	110	1.4	3.3
	DUP-1	7/21/2010	0.18 U	0.18 U	0.21 U	0.19 U	0.28 U	0.27 U	16	0.24 U	0.64 I	85	0.68 U	3.5
	DUP-1	1/25/2011	0.57 I	0.20 I	0.21 U	0.19 U	0.28 U	0.89 I	2.4	0.24 U	0.28 I	10	0.68 U	1.0 U
	DUP-1	1/25/2011	0.18 U	0.18 U	0.21 U	0.19 U	0.28 U	0.70 I	1.4	0.24 U	0.25 U	6.3	0.68 U	1.0 U
	DUP-1	7/12/2011	2.0	0.18 U	0.21 U	0.19 U	0.28 U	0.50 I	3.0	0.24 U	1.1	31	0.68 U	5.8
	DUP-1	7/12/2011	2.0	0.18 U	0.21 U	0.19 U	0.28 U	0.56 I	2.8	0.24 U	1.2	32	0.68 U	5.8
	DUP-1	1/23/2012	0.18 U	0.18 U	0.21 U	0.19 U	0.28 U	0.27 U J	14 J	0.24 U	0.25 U	54	0.68 U	1.0 U
	DUP-1	1/23/2012	0.18 U	0.18 U	0.21 U	0.19 U	0.28 U	0.63 I J	14 J	0.24 U	0.25 U	51	0.68 U	1.0 U
	DUP-1	7/11/2012	1.5	0.14 U	0.17 U	0.20 U	0.13 U	0.44 I	1.2	0.14 U	0.64 I	20	0.44 U	5.2
	DUP-1	7/11/2012	1.4	0.14 U	0.17 U	0.20 U	0.13 U	0.55 I	1.3	0.14 U	0.54 I	20	0.44 U	5.7
RFI-WT14	2.5-15	2/26/2008	0.067 U	0.076 U	0.082 U	0.14 U	0.058 U	0.079 U	0.18 U	0.21 I	0.25 U	0.058 U	0.11 U	NA
RFI-S14	20 - 30	2/26/2008	0.067 U	0.076 U	0.082 U	0.14 U	0.058 U	0.079 U	0.18 U	0.17 I	0.25 U	0.058 U	0.11 U	NA
RFI-S14	20 - 30	1/29/2009	0.10 U	0.17 U	0.10 U	0.18 U	0.18 U	0.18 U	0.17 U	1.0	0.19 U	0.16 U	0.36 U	NA
RFI-WT15	2.5 - 15	7/10/2007	0.067 U	0.076 U	0.082 U	0.14 U	0.058 U	0.079 U	0.18 U	0.063 U	0.25 U	0.058 U	0.11 U	2.4 U
RFI-S15	20 - 30	7/10/2007	0.33 I	0.64 I	0.082 U	0.14 U	0.14 I	1.2	0.40 I	0.12 I	0.56 I	7.3	0.11 U	2.4 U
		2/26/2008	0.28 I	0.51 I	0.082 U	0.14 U	0.17 I	1.2	0.38 I	0.26 I	0.56 I	6.5	0.26 I	NA
		7/21/2008	0.18 I	0.73 I	0.10 U	0.18 U	0.18 U	0.82 I	1.2	0.19 U	0.84 I	5.8	0.36 U	NA
		1/29/2009	0.10 U	0.17 U	0.10 U	0.18 U	0.18 U	0.46 I	0.60 I	0.89 I	0.78 I	2.4	0.36 U	NA
		7/21/2009	0.10 U	0.17 U	0.10 U	0.18 U	0.18 U	1.1	0.17 U	0.19 U	0.45 I	0.69 I	0.36 U	NA
		1/26/2010	0.18 U	0.21 I	0.21 U	0.19 U	0.28 U	0.43 I	0.52 I	0.24 U	0.48 I	0.82 I	0.68 U	NA
		7/21/2010	0.18 U	0.51 I	0.21U	0.27 I	0.28 U	0.70 I	0.64 I	0.24 U	0.61 I	0.61 I	0.68 U	NA
		1/25/2011	0.18 U	0.18 U	0.21 U	0.19 U	0.28 U	0.29 I	0.78 I	0.24 U	0.77 I	0.29 U	0.68 U	NA
		7/12/2011	0.18 U	0.25 I	0.21 U	0.19 U	0.28 U	0.31 I	0.96 I	0.24 U	0.87 I	0.29 U	0.68 U	NA

Table 6. Summary of Analytes Detected in Groundwater
July 2007 - January 2012

Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center

Well Number	Screened Interval	Sample Date	1,1-Dichloroethane (70 ug/L)	1,2-Dichlorobenzene (600 ug/L)	1,3-Dichlorobenzene (210 ug/L)	1,4-Dichlorobenzene (75 ug/L)	Benzene (1 ug/L)	Chlorobenzene (100 ug/L)	cis-1,2-Dichloroethene (70 ug/L)	Toluene (40 ug/L)	trans-1,2-Dichloroethene (100 ug/L)	Vinyl chloride (1 ug/L)	Xylenes- Total (20 ug/L)	1,4-Dioxane (3.2 ug/L)
RFI-S16	20 - 30	7/10/2007	0.067 U	0.076 U	0.082 U	0.14 U	0.32 I	0.079 U	0.18 U	0.091 I	0.25 U	2.5	0.54 I	2.4 U
		2/27/2008	0.067 U	0.076 U	0.082 U	0.14 U	0.14 I	0.079 U	0.18 U	0.070 I	0.25 U	0.42 I	0.14 I	NA
		7/21/2008	0.10 U	0.17 U	0.10 U	0.18 U	0.18 U	0.18 U	0.17 U	0.19 U	0.19 U	0.16 U	0.36 U	NA
		1/29/2009	0.10 U	0.17 U	0.10 U	0.18 U	0.18 U	0.18 U	0.17 U	0.85 I	0.19 U	0.16 U	0.36 U	NA
		7/21/2009	0.10 U	0.17 U	0.10 U	0.18 U	0.18 U	0.18 U	0.17 U	0.19 U	0.19 U	0.16 U	0.36 U	NA
		1/26/2010	0.18 U	0.18 U	0.21 U	0.19 U	0.28 U	0.27 U	0.22 U	0.24 U	0.25 U	2.1	0.68 U	NA
		7/21/2010	0.18 U	0.18 U	0.21 U	0.19 U	0.28 U	0.27 U	0.22 U	0.24 U	0.25 U	5.0	0.68 U	NA
		1/25/2011	0.18 U	0.18 U	0.21 U	0.19 U	0.28 U	0.27 U	0.22 U	0.24 U	0.25 U	4.6	0.68 U	NA
		7/12/2011	0.18 U	0.18 U	0.21 U	0.19 U	0.28 U	0.27 U	0.22 U	0.24 U	0.25 U	3.6	0.68 U	NA
		1/24/2012	0.18 U	0.18 U	0.21 U	0.19 U	0.28 U	0.27 U J	0.22 U J	0.24 U	0.25 U	0.29 U	0.68 U	NA
		7/11/2012	0.20 U	0.14 U	0.17 U	0.20 U	0.13 U	0.13 U	0.21 U	0.14 U	0.26 U	1.6	0.44 U	NA
RFI-S17	20 - 30	7/10/2007	0.067 U	0.076 U	0.082 U	0.14 U	0.13 I	0.079 U	0.18 U	0.063 U	0.25 U	16	0.11 U	2.4 U
		2/27/2008	0.32 I	0.076 U	0.082 U	0.14 U	0.16 I	0.079 U	0.36 I	0.16 I	0.84 I	26	0.11 U	NA
		7/21/2008	0.69 I	0.17 U	0.10 U	0.18 U	0.26 I	0.18 U	0.17 U	0.19 I	0.23 I	22	0.36 U	NA
		1/29/2009	0.10 U	0.17 U	0.10 U	0.18 U	0.18 U	0.18 U	0.17 U	0.67 I	0.34 I	7.4	0.36 U	NA
		7/21/2009	0.10 U	0.17 U	0.10 U	0.18 U	0.18 I	0.18 U	0.17 U	0.19 U	1.2	33	0.36 U	NA
		1/26/2010	0.33 I	0.18 U	0.21 U	0.19 U	0.28 U	0.27 U	0.22 U	0.24 U	0.25 U	5.6	0.68 U	NA
		7/21/2010	0.18 U	0.18 U	0.21 U	0.19 U	0.28 U	0.27 U	0.22 U	0.24 U	0.25 U	22	0.68 U	NA
		1/25/2011	1.1	0.18 U	0.21 U	0.19 U	0.28 U	0.27 U	0.22 U	0.24 U	0.25 U	0.43 I	0.68 U	NA
		7/12/2011	1.1	0.18 U	0.21 U	0.19 U	0.32 I	0.27 U	0.22 U	0.24 U	0.25 U	4.0	0.68 U	NA
		1/24/2012	0.18 U	0.18 U	0.21 U	0.19 U	0.28 U	0.27 U J	0.22 U J	0.24 U	0.25 U	0.29 U	0.68 U	NA
		7/11/2012	0.20 U	0.14 U	0.17 U	0.20 U	0.13 U	0.13 U	0.88 I	0.14 U	1.1	59	0.44 U	NA
SWMU-7 / MW-1	2.5 - 14.5	7/10/2007	0.067 U	0.076 U	0.082 U	0.14 U	0.058 U	0.079 U	0.18 U	0.063 U	0.25 U	0.058 U	0.11 U	2.4 U
AOC-B / MW-1	2.5 - 14.5	7/10/2007	0.067 U	0.076 U	0.082 U	0.14 U	0.058 U	0.079 U	0.18 U	0.063 U	0.25 U	0.058 U	0.11 U	2.4 U
AOC-F / MW-1	2.5 - 14.5	7/11/2007	0.067 U	0.17 I	0.16 I	0.53 I	0.25 I	3.5	0.18 U	0.14 I	0.25 U	0.23 I	0.11 U	NA

All results in micrograms per liter (ug/L). Results exceeding the Groundwater Cleanup Target Levels (GCTLs) indicated in bold.

NA Not analyzed

U Analyte was not detected at or above the indicated concentration.

I Detected concentration is above the laboratory method detection limit (MDL) but below the method reporting limit (RL) and is an estimate.

Q,V Samples held beyond the accepted holding time. Indicates the analyte was detected in both the sample and the associated method blank.

(70 ug/L) Groundwater Cleanup Target Level (GCTL) provided in Table I of Chapter 62-777 of the Florida Administrative Code.

Methylene chloride was detected in samples RFI-WT1 at 0.26 µg/L and RFI-13S at 0.27 µg/L (GCTL is 5 µg/L) on January 29, 2009.

Chloromethane was detected in sample RFI-7S at 0.33 µg/L (GCTL is 2.7 µg/L) on January 29, 2009.

Table 7
PROPOSED WELL SAMPLING MATRIX FOR 2013 GAP
Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center

Well Number (screen interval)	Sampling Frequency	Sample Date	Vinyl chloride (1 ug/L)	1,4-Dioxane (3.2 ug/L)	Sample in 2013?	Water Levels Needed?	Abandon Monitor Well?	Rationale
RFI-WT1 (2.5 - 15)	Annual	2/1/2006	0.29 U	NA	No	Yes	No	<ul style="list-style-type: none"> • Meets decision flow chart criteria for concentrations below GCTLs for at least 4 consecutive events. • Samples from nearby upgradient shallow zone wells are below GCTLs. • Not within recovery well radius of influence. • Downgradient point for water level.
		1/29/2007	0.058 U	NA				
		2/27/2008	0.058 U	NA				
		1/29/2009	0.16 U	NA				
RFI-S1 (20 - 30)	Annual	2/1/2006	0.29 U	NA	Yes - VC	Yes	No	<ul style="list-style-type: none"> • Meets decision flow chart criteria for concentrations below GCTLs for at least 4 consecutive events. • Downgradient lower zone well. • Not within recovery well radius of influence / used to define capture area.
		1/29/2007	0.058 U	NA				
		2/27/2008	0.058 U	NA				
		1/29/2009	0.16 U	NA				
		1/26/2010	0.29 U	NA				
		1/25/2011	0.29 U	NA				
		1/23/2012	0.29 U	NA				
RFI-S2 (20 - 30)	Semiannual	2/1/2006	0.69 I	2.4 U	No	Yes	No	<ul style="list-style-type: none"> • Meets decision flow chart criteria for concentrations below GCTLs for at least 4 consecutive events. • Within recovery well radius of influence / used to define capture area.
		7/1/2006	0.058 U	2.4 U				
		1/29/2007	0.058 U	2.4 U				
		7/11/2007	0.058 U	2.4 U				
RFI-S4 (20 - 30)	Semiannual	2/1/2006	0.42 I	2.4 U	No	Yes	No	<ul style="list-style-type: none"> • Meets decision flow chart criteria for concentrations below GCTLs for at least 4 consecutive events. • Within recovery well radius of influence / used to define capture area.
		7/1/2006	0.058 U	2.4 U				
		1/29/2007	0.058 U	2.4 U				
		7/11/2007	0.058 U	2.4 U				
RFI-WT5 (2.5 - 15)	Semiannual	2/1/2006	0.29 U	2.4 U	No	Yes	No	<ul style="list-style-type: none"> • Meets decision flow chart criteria for concentrations below GCTLs for at least 4 consecutive events. • Samples from nearby upgradient shallow zone wells are below GCTLs. • Within recovery well radius of influence / used to define capture area.
		7/1/2006	0.058 U	2.4 U				
		1/29/2007	0.058 U	2.4 U				
		7/11/2007	0.058 U	2.4 U				
RFI-S6 (20 - 30)	Annual	2/1/2006	65	4.6	Yes - VC Yes - 1,4-D	Yes	No	<ul style="list-style-type: none"> • Groundwater concentrations (VC) not below GCTLs for 4 consecutive events. • Within recovery well radius of influence / used to define capture area.
		1/29/2007	17	2.4 U				
		2/26/2008	6.5	2.8				
		1/29/2009	3.5	0.54 U				
		1/26/2010	1.4	1.4				
		1/25/2011	0.71 I	1.6 I				
		1/23/2012	0.29 U	1.0 U				
RFI-S7 (20 - 30)	Semiannual	7/10/2007	1.2	NA	Yes - VC	Yes	No	<ul style="list-style-type: none"> • Groundwater concentrations (VC) not below GCTLs for 4 consecutive events. • Samples from nearby upgradient lower zone wells are below GCTLs. • Within recovery well radius of influence / used to define capture area.
		7/10/2007	2.0	NA				
		2/26/2008	0.44 I	NA				
		7/22/2008	1.7	NA				
		1/29/2009	0.63 I	NA				
		7/21/2009	2.4	NA				
		1/26/2010	1.6	NA				
		7/21/2010	12	NA				
		1/25/2011	10	NA				
		7/12/2011	12	NA				
		1/23/2012	0.29 U	NA				
		7/11/2012	0.22 U	NA				

Table 7
PROPOSED WELL SAMPLING MATRIX FOR 2013 GAP
Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center

Well Number (screen interval)	Sampling Frequency	Sample Date	Vinyl chloride (1 ug/L)	1,4-Dioxane (3.2 ug/L)	Sample in 2013?	Water Levels Needed?	Abandon Monitor Well?	Rationale
RFI-WT8 (2.5 - 30)	Semiannual	2/1/2006	0.29	2.4 U	No	Yes	No	<ul style="list-style-type: none"> • Meets decision flow chart criteria for concentrations below GCTLs for at least 4 consecutive events. • Samples from nearby upgradient shallow zone wells are below GCTLs. • Within recovery well radius of influence / used to define capture area.
		7/1/2006	0.058 U	2.4 U				
		1/29/2007	0.058 U	2.4 U				
		7/10/2007	0.058 U	2.4 U				
RFI-S8 (20 - 30)	Semiannual	1/29/2007	0.058 U	2.4 U	No	Yes	No	<ul style="list-style-type: none"> • Meets decision flow chart criteria for concentrations below GCTLs for at least 4 consecutive events. • Samples from nearby upgradient lower zone wells are above GCTLs. • Within recovery well radius of influence / used to define capture area.
		7/10/2007	0.068 U	2.4 U				
		2/27/2008	0.19 I	NA				
		7/22/2008	0.16 U	NA				
RFI-WT9 (2.5 - 15)	Semiannual	1/29/2007	0.058 U	2.4 U	No	Yes	No	<ul style="list-style-type: none"> • Meets decision flow chart criteria for concentrations below GCTLs for at least 4 consecutive events. • Samples from nearby upgradient shallow zone wells are below GCTLs. • Within recovery well radius of influence / used to define capture area.
		7/9/2007	0.058 U	2.5 U				
		2/27/2008	0.058 U	NA				
		7/22/2008	0.16 U	NA				
RFI-S9 (20- 30)	Semiannual	1/31/2006	0.29	2.4	Yes - 1,4-D	Yes	No	<ul style="list-style-type: none"> • Groundwater concentrations (1,4-D) not below GCTLs from 4 consecutive events. • Samples from nearby upgradient lower zone wells are above GCTLs. • Within recovery well radius of influence / used to define capture area.
		7/1/2006	0.74	2.4 U				
		1/29/2007	0.33 I	4.1				
		7/9/2007	0.058 U	2.8 I				
		2/27/2008	NA	3.9				
		7/22/2008	NA	3.5				
		1/29/2009	NA	2.3				
		7/21/2009	NA	3.8				
		1/26/2010	NA	2.7				
		7/21/2010	NA	5.5				
		1/24/2011	NA	2.6				
		7/12/2011	NA	3.3 Q,V				
		1/23/2012	NA	2.6				
		7/11/2012	NA	2.0				
RFI-WT10 (2.5 - 15)	Semiannual	2/1/2006	0.29	2.4 U	No	Yes	No	<ul style="list-style-type: none"> • Meets decision flow chart criteria for concentrations below GCTLs for at least 4 consecutive events. • Samples from nearby upgradient shallow zone wells are below GCTLs. • Within recovery well radius of influence / used to define capture area.
		7/1/2006	0.058 U	2.4 U				
		1/29/2007	0.058 U	2.4 U				
		7/9/2007	0.058 U	2.4 U				
RFI-S10 (20 - 30)	Annual	1/29/2007	0.6 I	2.4 U	Yes - VC	Yes	No	<ul style="list-style-type: none"> • Meets decision flow chart criteria for concentrations below GCTLs for at least 4 consecutive events. • Samples from nearby upgradient lower zone wells are above GCTLs. • Within recovery well radius of influence / used to define capture area.
		7/9/2007	0.058 U	2.4 U				
		2/27/2008	0.30 I	NA				
		7/22/2008	0.47 I	NA				
		1/29/2009	0.45 I	NA				
		7/21/2009	0.16 U	NA				
		1/26/2010	0.34 I	NA				
		7/21/2010	0.29 U	NA				
		1/24/2011	0.29 U	NA				
		7/12/2011	0.22 U	NA				
		1/23/2012	0.29 U	NA				
		7/11/2012	0.22 U	NA				

Table 7
PROPOSED WELL SAMPLING MATRIX FOR 2013 GAP
Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center

Well Number (screen interval)	Sampling Frequency	Sample Date	Vinyl chloride (1 ug/L)	1,4-Dioxane (3.2 ug/L)	Sample in 2013?	Water Levels Needed?	Abandon Monitor Well?	Rationale
RFI-S13 (20 - 30)	Semiannual	1/29/2007	60	19	Yes - VC/1,4-D	Yes	No	<ul style="list-style-type: none"> • Groundwater concentrations (VC / 1,4-D) not below GCTLs for 4 consecutive events. • Samples from nearby upgradient lower zone wells are above GCTLs. • Within recovery well radius of influence / used to define capture area.
		7/10/2007	20	6.9				
		2/26/2008	0.62 I	4.6				
		7/21/2008	0.34 I	0.54 U				
		1/29/2009	0.16 U	0.54 U				
		7/29/2009	12	7.1				
		1/26/2010	370	62				
		3/10/2010	10	1.3				
		7/21/2010	110	3.3				
		1/25/2011	10	1.0 U				
		7/12/2011	31	5.8				
		1/23/2012	54	1.0 U				
		7/11/2012	20	5.2				
RFI-WT14 (2.5 - 15)	Annual	2/1/2006	0.55 I	NA	No	Yes	No	<ul style="list-style-type: none"> • Meets decision flow chart criteria for concentrations below GCTLs for at least 4 consecutive events. • Samples from nearby upgradient shallow zone wells are below GCTLs. • Not within recovery well radius of influence / used to define capture area.
		1/26/2007	0.64 I	NA				
		2/26/2008	0.058 U	NA				
		1/29/2009	0.16 U	NA				
RFI-S14 (20 - 30)	Annual	2/1/2006	0.29 U	NA	No	Yes	No	<ul style="list-style-type: none"> • Meets decision flow chart criteria for concentrations below GCTLs for at least 4 consecutive events. • Samples from nearby upgradient lower zone wells are below GCTLs. • Not within recovery well radius of influence / used to define capture area.
		1/26/2007	0.058 U	NA				
		2/26/2008	0.058 U	NA				
		1/29/2009	0.16 U	NA				
RFI-WT15 (2.5 - 15)	Semiannual	2/1/2006	0.29 U	2.4 U	No	Yes	No	<ul style="list-style-type: none"> • Meets decision flow chart criteria for concentrations below GCTLs for at least 4 consecutive events. • Samples from nearby upgradient shallow zone wells are below GCTLs. • Not within recovery well radius of influence / used to define capture area.
		7/1/2006	0.058 U	2.4 U				
		1/26/2007	0.058 U	2.4 U				
		7/10/2007	0.058 U	2.4 U				
RFI-S15 (20 - 30)	Semiannual	1/29/2007	6.0	2.4 U	No	Yes	No	<ul style="list-style-type: none"> • Groundwater concentrations (VC) below GCTLs for 4 consecutive events. • Samples from nearby upgradient lower zone wells are below GCTLs. • Within recovery well radius of influence / used to define capture area.
		7/10/2007	7.3	2.4 U				
		2/26/2008	6.5	NA				
		7/21/2008	5.8	NA				
		1/29/2009	2.4	NA				
		7/21/2009	0.69 I	NA				
		1/26/2010	0.82 I	NA				
		7/21/2010	0.61 I	NA				
		1/25/2011	0.29 U	NA				
		7/12/2011	0.29 U	NA				

Table 7
PROPOSED WELL SAMPLING MATRIX FOR 2013 GAP
Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center

Well Number (screen interval)	Sampling Frequency	Sample Date	Vinyl chloride (1 ug/L)	1,4-Dioxane (3.2 ug/L)	Sample in 2013?	Water Levels Needed?	Abandon Monitor Well?	Rationale
RFI-S16 (20 - 30)	Semiannual	1/29/2007	1.1	2.4 U	Yes - VC	Yes	No	<ul style="list-style-type: none"> Groundwater concentrations (VC) not below GCTLs for 4 consecutive events. Samples from nearby upgradient lower zone wells are above GCTLs. Within recovery well radius of influence / used to define capture area.
		7/10/2007	2.5	2.4 U				
		2/27/2008	0.42 I	NA				
		7/21/2008	0.16 U	NA				
		1/29/2009	0.16 U	NA				
		7/21/2009	0.16 U	NA				
		1/26/2010	2.1	NA				
		7/21/2010	5.0	NA				
		1/25/2011	4.6	NA				
		7/12/2011	3.6	NA				
		1/24/2012	0.29 U	NA				
		7/11/2012	1.6	NA				
		1/29/2007	10	2.4 U				
		7/10/2007	16	2.4 U				
RFI-S17 (20 - 30)	Semiannual	2/27/2008	26	NA	Yes - VC	Yes	No	<ul style="list-style-type: none"> Groundwater concentrations (VC) not below GCTLs for 4 consecutive events. Within recovery well radius of influence / used to define capture area.
		7/21/2008	22	NA				
		1/29/2009	7.4	NA				
		7/21/2009	33	NA				
		1/26/2010	5.6	NA				
		7/21/2010	22	NA				
		1/25/2011	0.43 I	NA				
		7/12/2011	4.0	NA				
		1/24/2012	0.29 U	NA				
		7/11/2012	59	NA				
SWMU-7 / MW-1 (2.5 - 14.5)	Semiannual	2/1/2006	0.29 U	2.4 U	No	Yes	No	<ul style="list-style-type: none"> Meets decision flow chart criteria for concentrations below GCTLs for at least 4 consecutive events. Samples from nearby upgradient shallow zone wells are below GCTLs. Within recovery well radius of influence / used to define capture area.
		7/1/2006	0.058 U	2.4 U				
		1/26/2007	0.058 U	2.4 U				
		7/10/2007	0.058 U	2.4 U				
AOC-B / MW-1 (2.5 - 14.5)	Semiannual	2/1/2006	0.29 U	2.4 U	No	Yes	No	<ul style="list-style-type: none"> Meets decision flow chart criteria for concentrations below GCTLs for at least 4 consecutive events. Samples from nearby upgradient shallow zone wells are below GCTLs. Within recovery well radius of influence / used to define capture area.
		7/1/2006	0.058 U	2.4 U				
		1/26/2007	0.058 U	2.4 U				
		7/10/2007	0.058 U	2.4 U				
AOC-F / MW-1 (2.5 - 14.5)	Semiannual	2/1/2006	0.29 U	NA	No	No	Yes ^{1/}	<ul style="list-style-type: none"> Meets decision flow chart criteria for concentrations below GCTLs for at least 4 consecutive events. Not within recovery well radius of influence. Nearby upgradient water level shallow zone well / used to define capture area.
		7/1/2006	0.058 U	NA				
		1/26/2007	0.058 U	NA				
		7/11/2007	0.23 I	NA				

All results in micrograms per liter (ug/L). Results exceeding the Groundwater Cleanup Target Levels (GCTLs) indicated in bold.

NA Not analyzed

U Analyte was not detected at or above the indicated concentration.

I Detected concentration is above the laboratory method detection limit (MDL) but below the method reporting limit (MRL) and is an estimate.

Q,V Samples held beyond the accepted holding time. Indicates the analyte was detected in both the sample and the associated method blank.

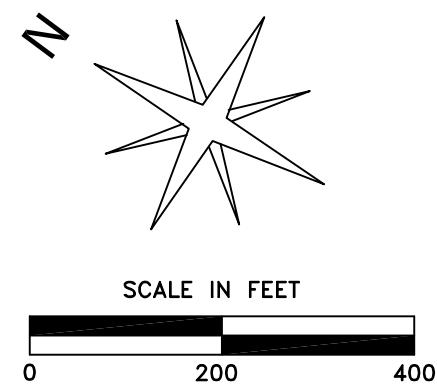
Orange Shade - wells eliminated from GAP as approved on February 19 and December 22, 2008, October 9, 2009, November 4, 2010, and October 19, 2011.

Yellow Shade - proposed change in sampling frequency from semiannual to annual in 2013

^{1/} Abandoned in August 2011.



FIGURES



LEGEND

⊗ SWMU5/MW-1	RFI-WELLS
⊗ RFI-S1	RFI WELLS (LOWER ZONE)
⊗ RFI-WT1	RFI WELLS (SHALLOW ZONE)
⊕ RW-6	CAS WELLS
◎ BW-1	SHALLOW ZONE MONITOR WELL
○ BW-2	LOWER ZONE MONITOR WELL
◎ PZ-WT3	SHALLOW ZONE PIEZOMETER
○ PZ-S1	LOWER ZONE PIEZOMETER

FIGURE 1
SITE MAP

**NORTHROP GRUMMAN
SYSTEMS CORPORATION
ST. AUGUSTINE MANUFACTURING CENTER**



Figure 2. Concentration of Vinyl Chloride in Effluent Samples from the CAS
September 1993 - July 2012

Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center

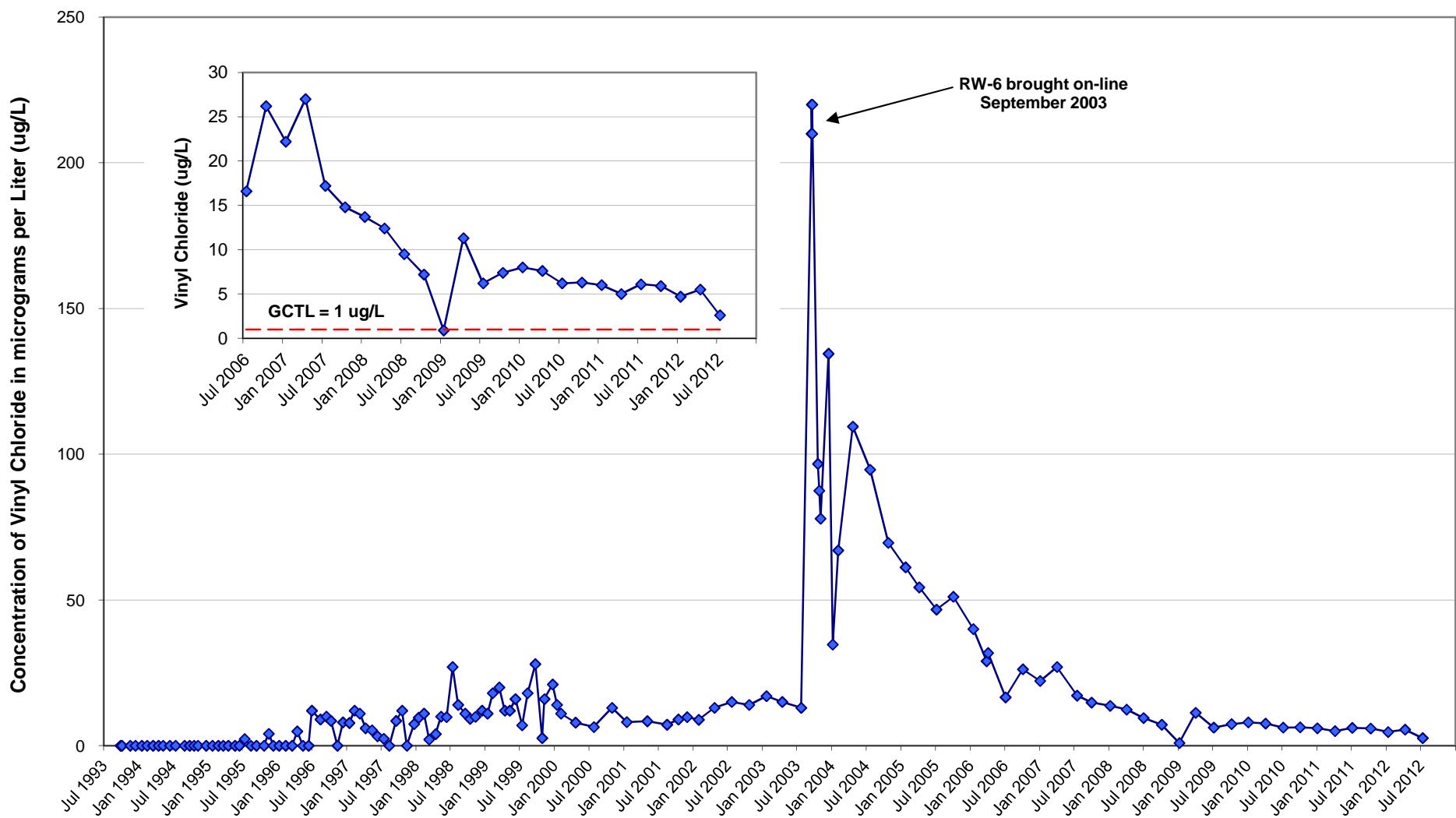
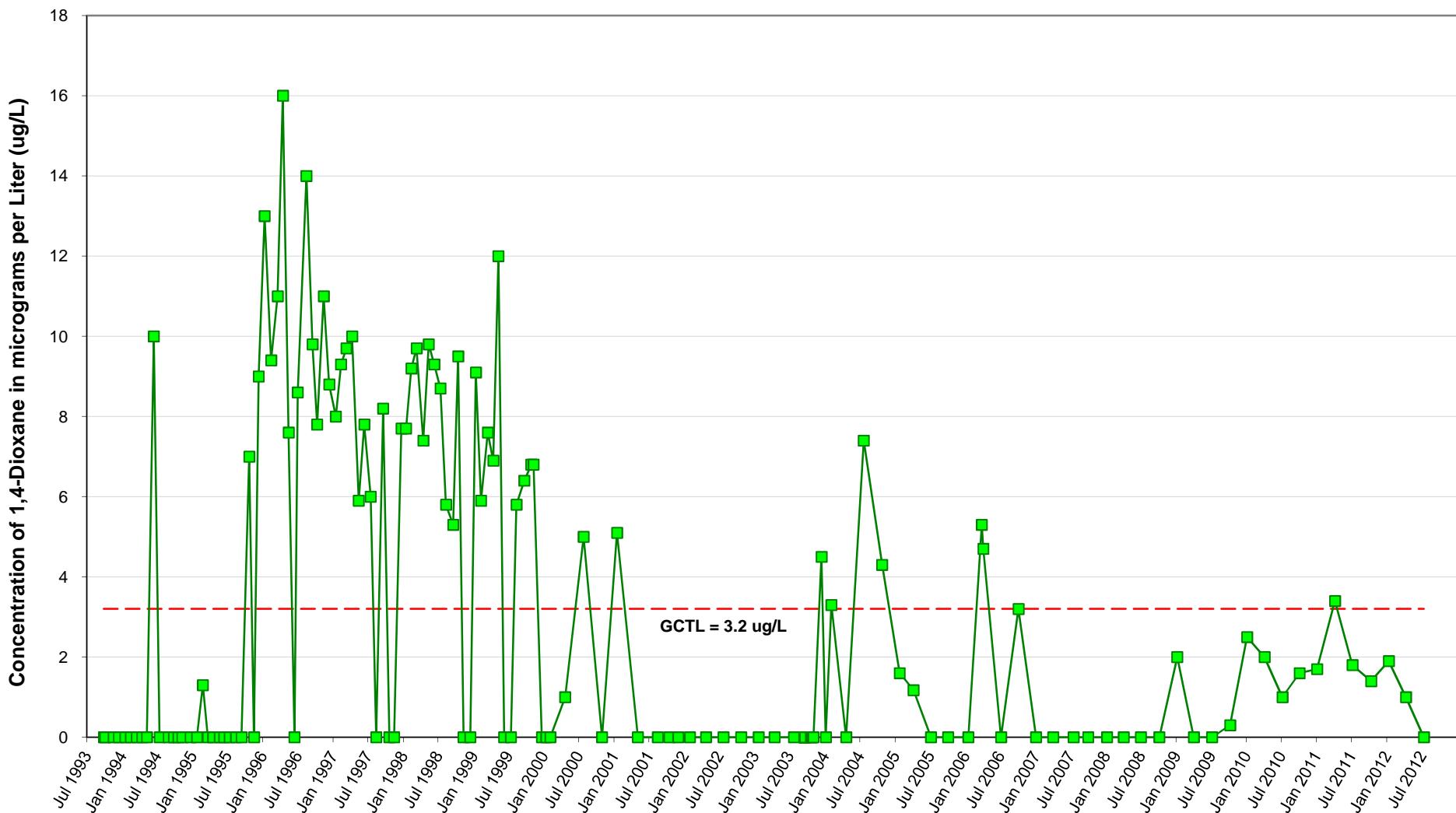


Figure 3. Concentration of 1,4-Dioxane in Effluent Samples from the CAS
September 1993 - July 2012

Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center



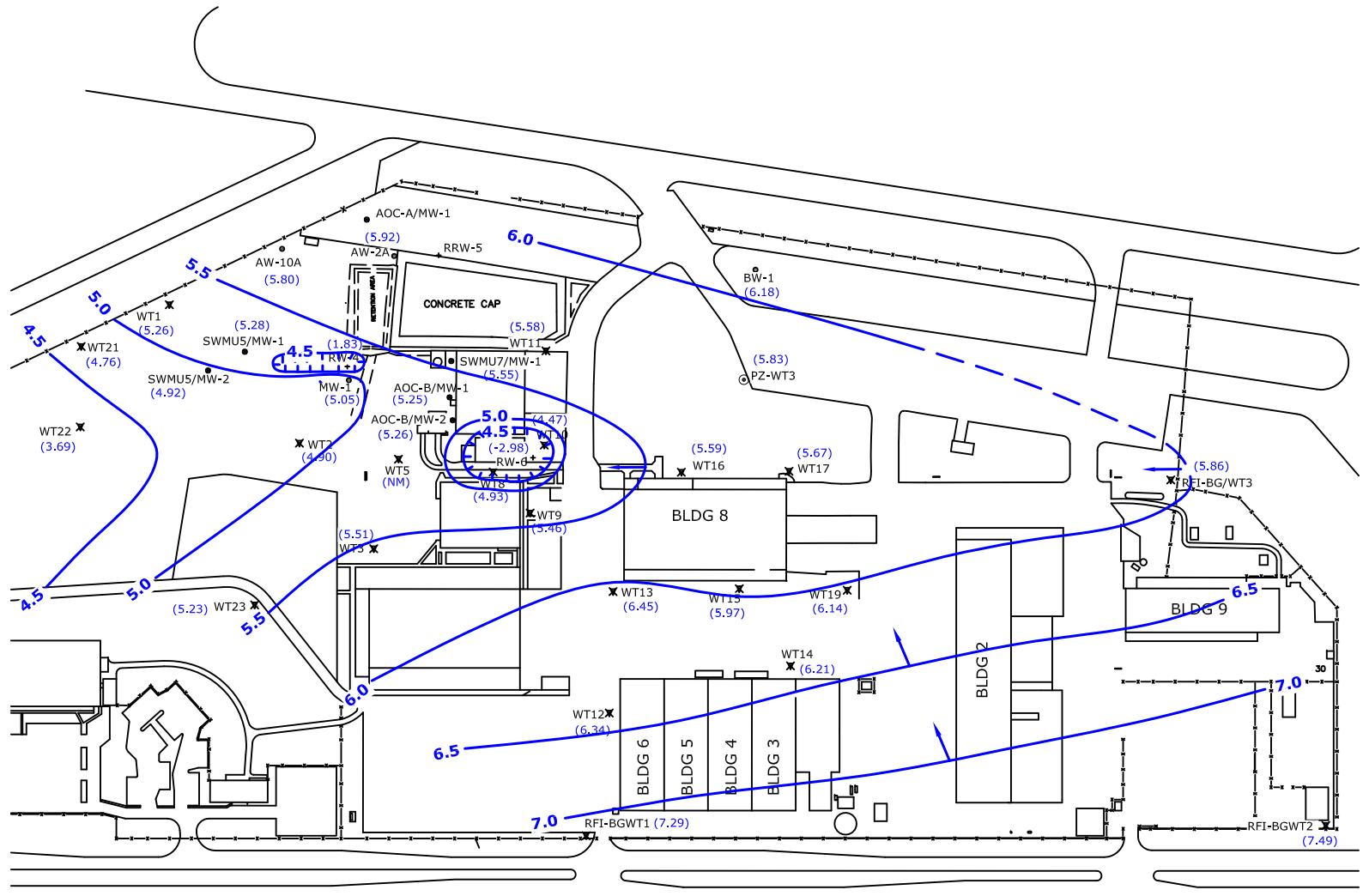
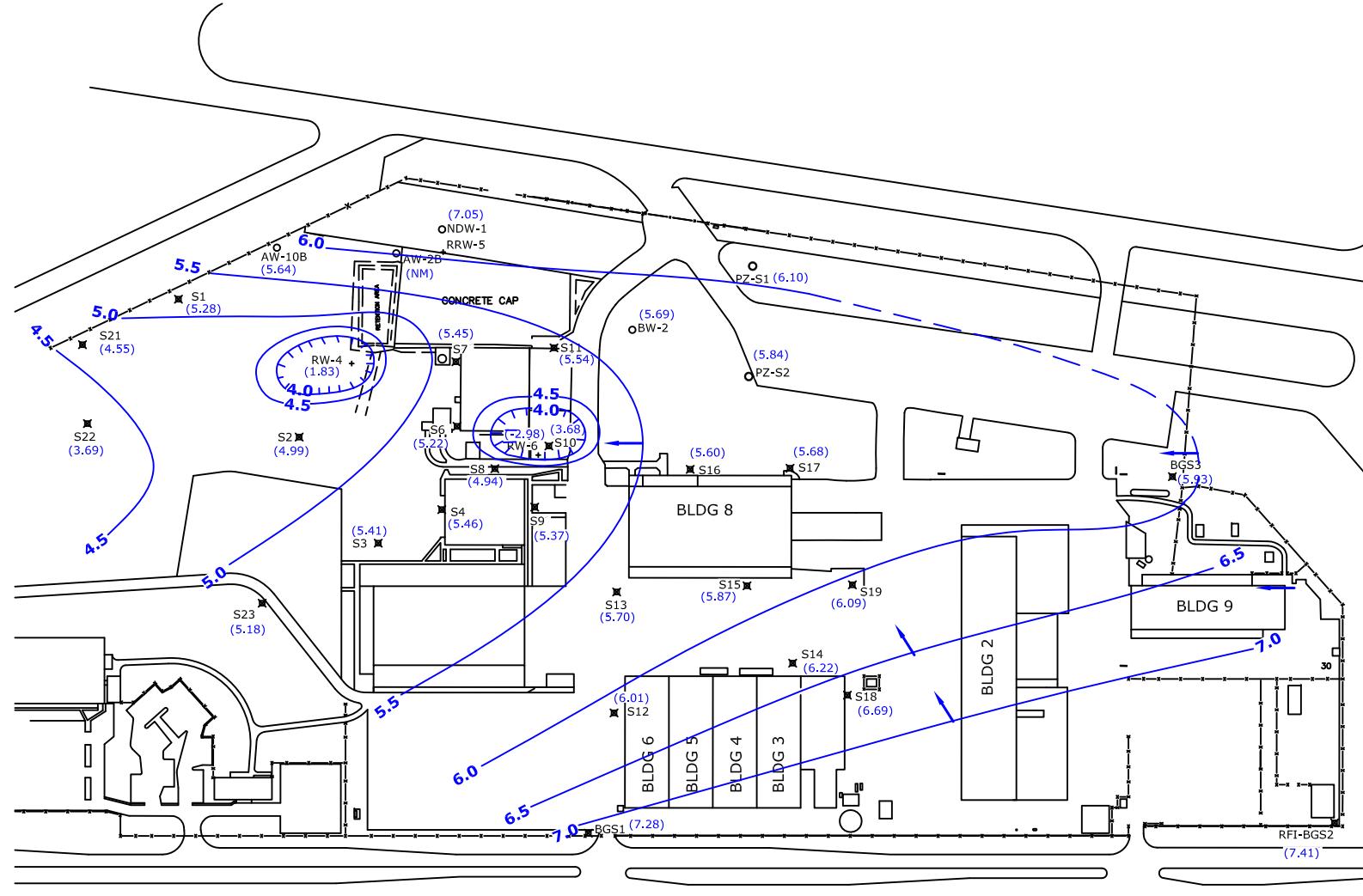


FIGURE 4
GROUNDWATER ELEVATION CONTOURS/
SHALLOW ZONE (0 - 18 ft bsl)

JULY 11, 2012
NORTHROP GRUMMAN SYSTEMS CORPORATION
ST. AUGUSTINE MANUFACTURING CENTER





LEGEND

RW-6	CAS WELLS
RFI-S22	RFI WELLS (LOWER ZONE)
PZ-S2	LOWER ZONE PIEZOMETER
AW-10B	DEEP MONITORING WELLS
x—x	FENCE
(5.68)	GROUNDWATER ELEVATION, FEET MEAN SEA LEVEL
(NM)	NOT MEASURED
CONTOUR LINE CONNECTING POINTS OF EQUAL GROUNDWATER ELEVATION	

FIGURE 5

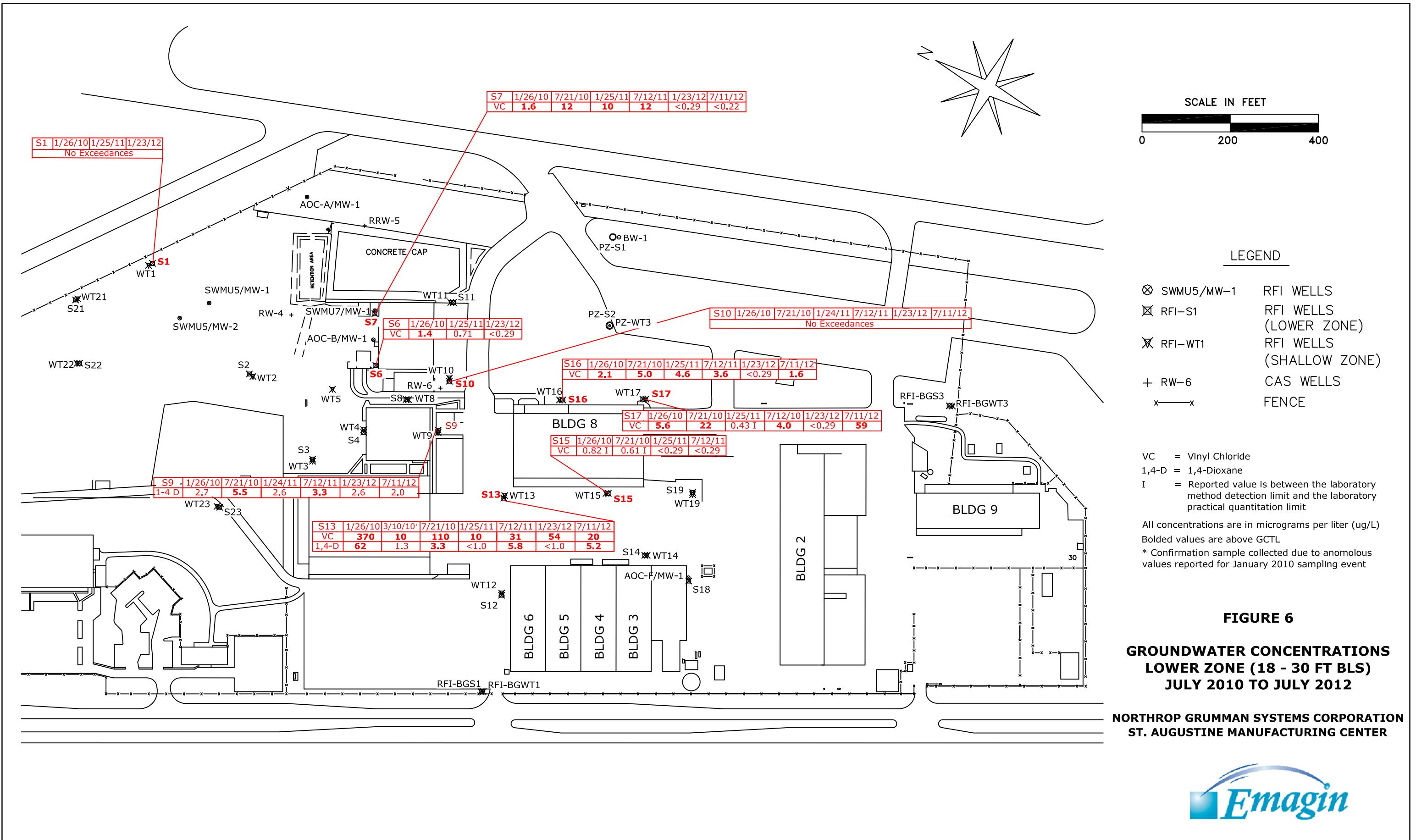
GROUNDWATER ELEVATION CONTOURS/
LOWER ZONE (18-30 ft bsl)

JULY 11, 2012
NORTHROP GRUMMAN SYSTEMS CORPORATION
ST. AUGUSTINE MANUFACTURING CENTER



SCALE IN FEET
0 150 300

 Emagin





APPENDIX A

RECOVERY WELL LABORATORY ANALYTICAL DATA

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-78423-2

Client Project/Site: Recovery Wells 4-12

For:

Northrop Grumman Corp.

Integrated Systems

5000 U.S.#1 North

St. Augustine, Florida 32095

Attn: Mr. Rick Doria

Linda A. Wolfe

Authorized for release by:

4/24/2012 5:44:28 PM

Linda Wolfe

Project Manager I

linda.wolfe@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Method Summary	4
Definitions	5
Client Sample Results	6
Surrogate Summary	11
QC Sample Results	12
Chronicle	19
Chain of Custody	20
Certification Summary	21

Sample Summary

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-78423-3	RW-4	Water	04/09/12 07:45	04/10/12 09:11
680-78423-4	RW-6	Water	04/09/12 08:00	04/10/12 09:11

Method Summary

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8260C SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL TAM
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

Definitions/Glossary

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Indicates that the compound was analyzed for but not detected.
J	Estimated value; value may not be accurate.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
J	Estimated value; value may not be accurate.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

Glossary

Abbreviation

These commonly used abbreviations may or may not be present in this report.

⊗	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Client Sample ID: RW-4

Date Collected: 04/09/12 07:45

Date Received: 04/10/12 09:11

Lab Sample ID: 680-78423-3

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	<0.33	U	1.0	0.33	ug/L			04/16/12 18:56	1
Bromomethane	<0.80	U	1.0	0.80	ug/L			04/16/12 18:56	1
Vinyl chloride	2.1		1.0	0.18	ug/L			04/16/12 18:56	1
Chloroethane	<1.0	U	1.0	1.0	ug/L			04/16/12 18:56	1
Methylene Chloride	<1.0	U	5.0	1.0	ug/L			04/16/12 18:56	1
Acetone	<5.0	U	25	5.0	ug/L			04/16/12 18:56	1
Carbon disulfide	<0.60	U	2.0	0.60	ug/L			04/16/12 18:56	1
1,1-Dichloroethene	<0.11	U	1.0	0.11	ug/L			04/16/12 18:56	1
1,1-Dichloroethane	<0.25	U	1.0	0.25	ug/L			04/16/12 18:56	1
cis-1,2-Dichloroethene	<0.15	U	1.0	0.15	ug/L			04/16/12 18:56	1
trans-1,2-Dichloroethene	<0.20	U	1.0	0.20	ug/L			04/16/12 18:56	1
Chloroform	<0.14	U	1.0	0.14	ug/L			04/16/12 18:56	1
1,2-Dichloroethane	<0.10	U	1.0	0.10	ug/L			04/16/12 18:56	1
2-Butanone (MEK)	<1.0	U	10	1.0	ug/L			04/16/12 18:56	1
1,1,1-Trichloroethane	<0.50	U	1.0	0.50	ug/L			04/16/12 18:56	1
Carbon tetrachloride	<0.50	U J	1.0	0.50	ug/L			04/16/12 18:56	1
Dichlorobromomethane	<0.25	U	1.0	0.25	ug/L			04/16/12 18:56	1
1,1,2,2-Tetrachloroethane	<0.18	U	1.0	0.18	ug/L			04/16/12 18:56	1
1,2-Dichloropropane	<0.13	U	1.0	0.13	ug/L			04/16/12 18:56	1
trans-1,3-Dichloropropene	<0.21	U	1.0	0.21	ug/L			04/16/12 18:56	1
Trichloroethene	<0.13	U	1.0	0.13	ug/L			04/16/12 18:56	1
Chlorodibromomethane	<0.10	U	1.0	0.10	ug/L			04/16/12 18:56	1
1,1,2-Trichloroethane	<0.13	U	1.0	0.13	ug/L			04/16/12 18:56	1
Benzene	<0.25	U	1.0	0.25	ug/L			04/16/12 18:56	1
cis-1,3-Dichloropropene	<0.11	U	1.0	0.11	ug/L			04/16/12 18:56	1
Bromoform	<0.50	U	1.0	0.50	ug/L			04/16/12 18:56	1
2-Hexanone	<1.0	U	10	1.0	ug/L			04/16/12 18:56	1
4-Methyl-2-pentanone (MIBK)	<1.0	U	10	1.0	ug/L			04/16/12 18:56	1
Tetrachloroethene	<0.15	U	1.0	0.15	ug/L			04/16/12 18:56	1
Toluene	<0.33	U	1.0	0.33	ug/L			04/16/12 18:56	1
Chlorobenzene	<0.25	U	1.0	0.25	ug/L			04/16/12 18:56	1
Ethylbenzene	<0.11	U	1.0	0.11	ug/L			04/16/12 18:56	1
Styrene	<0.11	U	1.0	0.11	ug/L			04/16/12 18:56	1
Xylenes, Total	<0.20	U	2.0	0.20	ug/L			04/16/12 18:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	111		70 - 130		04/16/12 18:56	1
4-Bromofluorobenzene	92		70 - 130		04/16/12 18:56	1
Dibromofluoromethane	91		70 - 130		04/16/12 18:56	1

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.3	I	2.0	1.0	ug/L			04/12/12 12:08	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	<0.79	U	9.5	0.79	ug/L			04/11/12 14:59	1
Bis(2-chloroethyl)ether	<1.0	U	9.5	1.0	ug/L			04/11/12 14:59	1
bis(chloroisopropyl) ether	<0.74	U	9.5	0.74	ug/L			04/11/12 14:59	1
2-Chlorophenol	<0.82	U	9.5	0.82	ug/L			04/11/12 14:59	1
1,3-Dichlorobenzene	<0.56	U	9.5	0.56	ug/L			04/11/12 14:59	1

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Client Sample ID: RW-4

Lab Sample ID: 680-78423-3

Date Collected: 04/09/12 07:45

Matrix: Water

Date Received: 04/10/12 09:11

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	<0.51	U	9.5	0.51	ug/L	04/11/12 14:59	04/18/12 17:17		1
1,2-Dichlorobenzene	<0.50	U	9.5	0.50	ug/L	04/11/12 14:59	04/18/12 17:17		1
2-Methylphenol	<0.84	U	9.5	0.84	ug/L	04/11/12 14:59	04/18/12 17:17		1
N-Nitrosodi-n-propylamine	<0.68	U	9.5	0.68	ug/L	04/11/12 14:59	04/18/12 17:17		1
Benzoic acid	<4.7	U	47	4.7	ug/L	04/11/12 14:59	04/18/12 17:17		1
Hexachloroethane	<0.72	U	9.5	0.72	ug/L	04/11/12 14:59	04/18/12 17:17		1
Nitrobenzene	<0.69	U	9.5	0.69	ug/L	04/11/12 14:59	04/18/12 17:17		1
Isophorone	<0.85	U	9.5	0.85	ug/L	04/11/12 14:59	04/18/12 17:17		1
2-Nitrophenol	<0.72	U	9.5	0.72	ug/L	04/11/12 14:59	04/18/12 17:17		1
2,4-Dimethylphenol	<3.8	U	9.5	3.8	ug/L	04/11/12 14:59	04/18/12 17:17		1
Bis(2-chloroethoxy)methane	<0.89	U	9.5	0.89	ug/L	04/11/12 14:59	04/18/12 17:17		1
2,4-Dichlorophenol	<1.0	U	9.5	1.0	ug/L	04/11/12 14:59	04/18/12 17:17		1
Benzyl alcohol	<1.0	U J	9.5	1.0	ug/L	04/11/12 14:59	04/18/12 17:17		1
1,2,4-Trichlorobenzene	<0.53	U	9.5	0.53	ug/L	04/11/12 14:59	04/18/12 17:17		1
Naphthalene	<0.66	U	9.5	0.66	ug/L	04/11/12 14:59	04/18/12 17:17		1
4-Chloroaniline	<2.1	U J	19	2.1	ug/L	04/11/12 14:59	04/18/12 17:17		1
Hexachlorobutadiene	<0.59	U	9.5	0.59	ug/L	04/11/12 14:59	04/18/12 17:17		1
4-Chloro-3-methylphenol	<0.95	U	9.5	0.95	ug/L	04/11/12 14:59	04/18/12 17:17		1
2-Methylnaphthalene	<0.74	U	9.5	0.74	ug/L	04/11/12 14:59	04/18/12 17:17		1
Hexachlorocyclopentadiene	<2.4	U	9.5	2.4	ug/L	04/11/12 14:59	04/18/12 17:17		1
2,4,6-Trichlorophenol	<0.81	U	9.5	0.81	ug/L	04/11/12 14:59	04/18/12 17:17		1
2,4,5-Trichlorophenol	<1.1	U	9.5	1.1	ug/L	04/11/12 14:59	04/18/12 17:17		1
2-Chloronaphthalene	<0.76	U	9.5	0.76	ug/L	04/11/12 14:59	04/18/12 17:17		1
2-Nitroaniline	<1.2	U	47	1.2	ug/L	04/11/12 14:59	04/18/12 17:17		1
Dimethyl phthalate	<0.94	U	9.5	0.94	ug/L	04/11/12 14:59	04/18/12 17:17		1
Acenaphthylene	<0.81	U	9.5	0.81	ug/L	04/11/12 14:59	04/18/12 17:17		1
3-Nitroaniline	<4.7	U	47	4.7	ug/L	04/11/12 14:59	04/18/12 17:17		1
Acenaphthene	<0.72	U	9.5	0.72	ug/L	04/11/12 14:59	04/18/12 17:17		1
2,4-Dinitrophenol	<9.5	U	47	9.5	ug/L	04/11/12 14:59	04/18/12 17:17		1
4-Nitrophenol	<1.8	U	47	1.8	ug/L	04/11/12 14:59	04/18/12 17:17		1
Dibenzofuran	<0.75	U	9.5	0.75	ug/L	04/11/12 14:59	04/18/12 17:17		1
2,4-Dinitrotoluene	<1.1	U	9.5	1.1	ug/L	04/11/12 14:59	04/18/12 17:17		1
2,6-Dinitrotoluene	<1.0	U	9.5	1.0	ug/L	04/11/12 14:59	04/18/12 17:17		1
3 & 4 Methylphenol	<1.2	U	9.5	1.2	ug/L	04/11/12 14:59	04/18/12 17:17		1
Diethyl phthalate	<0.83	U	9.5	0.83	ug/L	04/11/12 14:59	04/18/12 17:17		1
4-Chlorophenyl phenyl ether	<0.80	U	9.5	0.80	ug/L	04/11/12 14:59	04/18/12 17:17		1
Fluorene	<0.91	U	9.5	0.91	ug/L	04/11/12 14:59	04/18/12 17:17		1
4-Nitroaniline	<4.7	U	47	4.7	ug/L	04/11/12 14:59	04/18/12 17:17		1
4,6-Dinitro-2-methylphenol	<9.5	U	47	9.5	ug/L	04/11/12 14:59	04/18/12 17:17		1
N-Nitrosodiphenylamine	<0.87	U	9.5	0.87	ug/L	04/11/12 14:59	04/18/12 17:17		1
4-Bromophenyl phenyl ether	<0.73	U	9.5	0.73	ug/L	04/11/12 14:59	04/18/12 17:17		1
Hexachlorobenzene	<0.75	U	9.5	0.75	ug/L	04/11/12 14:59	04/18/12 17:17		1
Pentachlorophenol	<1.9	U	47	1.9	ug/L	04/11/12 14:59	04/18/12 17:17		1
Phenanthrene	<0.73	U	9.5	0.73	ug/L	04/11/12 14:59	04/18/12 17:17		1
Anthracene	<0.65	U	9.5	0.65	ug/L	04/11/12 14:59	04/18/12 17:17		1
Di-n-butyl phthalate	<0.79	U	9.5	0.79	ug/L	04/11/12 14:59	04/18/12 17:17		1
Fluoranthene	<0.70	U	9.5	0.70	ug/L	04/11/12 14:59	04/18/12 17:17		1
Pyrene	<0.60	U	9.5	0.60	ug/L	04/11/12 14:59	04/18/12 17:17		1
Butyl benzyl phthalate	<1.1	U	9.5	1.1	ug/L	04/11/12 14:59	04/18/12 17:17		1
3,3'-Dichlorobenzidine	<28	U	57	28	ug/L	04/11/12 14:59	04/18/12 17:17		1
Benzo[a]anthracene	<0.52	U	9.5	0.52	ug/L	04/11/12 14:59	04/18/12 17:17		1

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Client Sample ID: RW-4

Date Collected: 04/09/12 07:45
Date Received: 04/10/12 09:11

Lab Sample ID: 680-78423-3

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	<1.5	U	9.5	1.5	ug/L		04/11/12 14:59	04/18/12 17:17	1
Chrysene	<0.48	U	9.5	0.48	ug/L		04/11/12 14:59	04/18/12 17:17	1
1,4-Dioxane	<3.2	U	9.5	3.2	ug/L		04/11/12 14:59	04/18/12 17:17	1
Di-n-octyl phthalate	<1.3	U	9.5	1.3	ug/L		04/11/12 14:59	04/18/12 17:17	1
Benzo[b]fluoranthene	<2.5	U	9.5	2.5	ug/L		04/11/12 14:59	04/18/12 17:17	1
Benzo[k]fluoranthene	<1.1	U	9.5	1.1	ug/L		04/11/12 14:59	04/18/12 17:17	1
Benzo[a]pyrene	<0.67	U	9.5	0.67	ug/L		04/11/12 14:59	04/18/12 17:17	1
Indeno[1,2,3-cd]pyrene	<0.95	U	9.5	0.95	ug/L		04/11/12 14:59	04/18/12 17:17	1
Dibenz(a,h)anthracene	<0.95	U	9.5	0.95	ug/L		04/11/12 14:59	04/18/12 17:17	1
Benzo[g,h,i]perylene	<0.82	U	9.5	0.82	ug/L		04/11/12 14:59	04/18/12 17:17	1
Carbazole	<0.67	U	9.5	0.67	ug/L		04/11/12 14:59	04/18/12 17:17	1
<hr/>									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Phenol-d5	65		25 - 130				04/11/12 14:59	04/18/12 17:17	1
2-Fluorophenol	67		25 - 130				04/11/12 14:59	04/18/12 17:17	1
2,4,6-Tribromophenol	85		31 - 141				04/11/12 14:59	04/18/12 17:17	1
Nitrobenzene-d5	77		39 - 130				04/11/12 14:59	04/18/12 17:17	1
2-Fluorobiphenyl	75		38 - 130				04/11/12 14:59	04/18/12 17:17	1
Terphenyl-d14	39		10 - 143				04/11/12 14:59	04/18/12 17:17	1

Client Sample ID: RW-6

Date Collected: 04/09/12 08:00
Date Received: 04/10/12 09:11

Lab Sample ID: 680-78423-4

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	<0.33	U	1.0	0.33	ug/L		04/16/12 19:25	04/16/12 19:25	1
Bromomethane	<0.80	U	1.0	0.80	ug/L		04/16/12 19:25	04/16/12 19:25	1
Vinyl chloride	6.1		1.0	0.18	ug/L		04/16/12 19:25	04/16/12 19:25	1
Chloroethane	<1.0	U	1.0	1.0	ug/L		04/16/12 19:25	04/16/12 19:25	1
Methylene Chloride	<1.0	U	5.0	1.0	ug/L		04/16/12 19:25	04/16/12 19:25	1
Acetone	<5.0	U	25	5.0	ug/L		04/16/12 19:25	04/16/12 19:25	1
Carbon disulfide	<0.60	U	2.0	0.60	ug/L		04/16/12 19:25	04/16/12 19:25	1
1,1-Dichloroethene	<0.11	U	1.0	0.11	ug/L		04/16/12 19:25	04/16/12 19:25	1
1,1-Dichloroethane	<0.25	U	1.0	0.25	ug/L		04/16/12 19:25	04/16/12 19:25	1
cis-1,2-Dichloroethene	0.66	I	1.0	0.15	ug/L		04/16/12 19:25	04/16/12 19:25	1
trans-1,2-Dichloroethene	<0.20	U	1.0	0.20	ug/L		04/16/12 19:25	04/16/12 19:25	1
Chloroform	5.5		1.0	0.14	ug/L		04/16/12 19:25	04/16/12 19:25	1
1,2-Dichloroethane	<0.10	U	1.0	0.10	ug/L		04/16/12 19:25	04/16/12 19:25	1
2-Butanone (MEK)	<1.0	U	10	1.0	ug/L		04/16/12 19:25	04/16/12 19:25	1
1,1,1-Trichloroethane	<0.50	U	1.0	0.50	ug/L		04/16/12 19:25	04/16/12 19:25	1
Carbon tetrachloride	<0.50	U J	1.0	0.50	ug/L		04/16/12 19:25	04/16/12 19:25	1
Dichlorobromomethane	<0.25	U	1.0	0.25	ug/L		04/16/12 19:25	04/16/12 19:25	1
1,1,2,2-Tetrachloroethane	<0.18	U	1.0	0.18	ug/L		04/16/12 19:25	04/16/12 19:25	1
1,2-Dichloropropane	<0.13	U	1.0	0.13	ug/L		04/16/12 19:25	04/16/12 19:25	1
trans-1,3-Dichloropropene	<0.21	U	1.0	0.21	ug/L		04/16/12 19:25	04/16/12 19:25	1
Trichloroethene	<0.13	U	1.0	0.13	ug/L		04/16/12 19:25	04/16/12 19:25	1
Chlorodibromomethane	<0.10	U	1.0	0.10	ug/L		04/16/12 19:25	04/16/12 19:25	1
1,1,2-Trichloroethane	<0.13	U	1.0	0.13	ug/L		04/16/12 19:25	04/16/12 19:25	1
Benzene	<0.25	U	1.0	0.25	ug/L		04/16/12 19:25	04/16/12 19:25	1
cis-1,3-Dichloropropene	<0.11	U	1.0	0.11	ug/L		04/16/12 19:25	04/16/12 19:25	1

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Client Sample ID: RW-6

Lab Sample ID: 680-78423-4

Date Collected: 04/09/12 08:00

Matrix: Water

Date Received: 04/10/12 09:11

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	<0.50	U	1.0	0.50	ug/L			04/16/12 19:25	1
2-Hexanone	<1.0	U	10	1.0	ug/L			04/16/12 19:25	1
4-Methyl-2-pentanone (MIBK)	<1.0	U	10	1.0	ug/L			04/16/12 19:25	1
Tetrachloroethene	<0.15	U	1.0	0.15	ug/L			04/16/12 19:25	1
Toluene	<0.33	U	1.0	0.33	ug/L			04/16/12 19:25	1
Chlorobenzene	<0.25	U	1.0	0.25	ug/L			04/16/12 19:25	1
Ethylbenzene	<0.11	U	1.0	0.11	ug/L			04/16/12 19:25	1
Styrene	<0.11	U	1.0	0.11	ug/L			04/16/12 19:25	1
Xylenes, Total	<0.20	U	2.0	0.20	ug/L			04/16/12 19:25	1
Surrogate		%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	112			70 - 130				04/16/12 19:25	1
4-Bromofluorobenzene	91			70 - 130				04/16/12 19:25	1
Dibromofluoromethane	92			70 - 130				04/16/12 19:25	1

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	<1.0	U	2.0	1.0	ug/L			04/12/12 12:26	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	<0.79	U	9.5	0.79	ug/L			04/11/12 14:59	04/18/12 17:45
Bis(2-chloroethyl)ether	<1.0	U	9.5	1.0	ug/L			04/11/12 14:59	04/18/12 17:45
bis(chloroisopropyl) ether	<0.74	U	9.5	0.74	ug/L			04/11/12 14:59	04/18/12 17:45
2-Chlorophenol	<0.82	U	9.5	0.82	ug/L			04/11/12 14:59	04/18/12 17:45
1,3-Dichlorobenzene	<0.56	U	9.5	0.56	ug/L			04/11/12 14:59	04/18/12 17:45
1,4-Dichlorobenzene	<0.51	U	9.5	0.51	ug/L			04/11/12 14:59	04/18/12 17:45
1,2-Dichlorobenzene	<0.50	U	9.5	0.50	ug/L			04/11/12 14:59	04/18/12 17:45
2-Methylphenol	<0.84	U	9.5	0.84	ug/L			04/11/12 14:59	04/18/12 17:45
N-Nitrosodi-n-propylamine	<0.68	U	9.5	0.68	ug/L			04/11/12 14:59	04/18/12 17:45
Benzoic acid	<4.7	U	47	4.7	ug/L			04/11/12 14:59	04/18/12 17:45
Hexachloroethane	<0.72	U	9.5	0.72	ug/L			04/11/12 14:59	04/18/12 17:45
Nitrobenzene	<0.69	U	9.5	0.69	ug/L			04/11/12 14:59	04/18/12 17:45
Isophorone	<0.85	U	9.5	0.85	ug/L			04/11/12 14:59	04/18/12 17:45
2-Nitrophenol	<0.72	U	9.5	0.72	ug/L			04/11/12 14:59	04/18/12 17:45
2,4-Dimethylphenol	<3.8	U	9.5	3.8	ug/L			04/11/12 14:59	04/18/12 17:45
Bis(2-chloroethoxy)methane	<0.89	U	9.5	0.89	ug/L			04/11/12 14:59	04/18/12 17:45
2,4-Dichlorophenol	<1.0	U	9.5	1.0	ug/L			04/11/12 14:59	04/18/12 17:45
Benzyl alcohol	<1.0	U J	9.5	1.0	ug/L			04/11/12 14:59	04/18/12 17:45
1,2,4-Trichlorobenzene	<0.53	U	9.5	0.53	ug/L			04/11/12 14:59	04/18/12 17:45
Naphthalene	<0.66	U	9.5	0.66	ug/L			04/11/12 14:59	04/18/12 17:45
4-Chloroaniline	<2.1	U J	19	2.1	ug/L			04/11/12 14:59	04/18/12 17:45
Hexachlorobutadiene	<0.59	U	9.5	0.59	ug/L			04/11/12 14:59	04/18/12 17:45
4-Chloro-3-methylphenol	<0.95	U	9.5	0.95	ug/L			04/11/12 14:59	04/18/12 17:45
2-Methylnaphthalene	<0.74	U	9.5	0.74	ug/L			04/11/12 14:59	04/18/12 17:45
Hexachlorocyclopentadiene	<2.4	U	9.5	2.4	ug/L			04/11/12 14:59	04/18/12 17:45
2,4,6-Trichlorophenol	<0.81	U	9.5	0.81	ug/L			04/11/12 14:59	04/18/12 17:45
2,4,5-Trichlorophenol	<1.1	U	9.5	1.1	ug/L			04/11/12 14:59	04/18/12 17:45
2-Chloronaphthalene	<0.76	U	9.5	0.76	ug/L			04/11/12 14:59	04/18/12 17:45
2-Nitroaniline	<1.2	U	47	1.2	ug/L			04/11/12 14:59	04/18/12 17:45
Dimethyl phthalate	<0.94	U	9.5	0.94	ug/L			04/11/12 14:59	04/18/12 17:45
Acenaphthylene	<0.81	U	9.5	0.81	ug/L			04/11/12 14:59	04/18/12 17:45

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Client Sample ID: RW-6

Lab Sample ID: 680-78423-4

Date Collected: 04/09/12 08:00

Matrix: Water

Date Received: 04/10/12 09:11

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3-Nitroaniline	<4.7	U	47	4.7	ug/L		04/11/12 14:59	04/18/12 17:45	1
Acenaphthene	<0.72	U	9.5	0.72	ug/L		04/11/12 14:59	04/18/12 17:45	1
2,4-Dinitrophenol	<9.5	U	47	9.5	ug/L		04/11/12 14:59	04/18/12 17:45	1
4-Nitrophenol	<1.8	U	47	1.8	ug/L		04/11/12 14:59	04/18/12 17:45	1
Dibenzofuran	<0.75	U	9.5	0.75	ug/L		04/11/12 14:59	04/18/12 17:45	1
2,4-Dinitrotoluene	<1.1	U	9.5	1.1	ug/L		04/11/12 14:59	04/18/12 17:45	1
2,6-Dinitrotoluene	<1.0	U	9.5	1.0	ug/L		04/11/12 14:59	04/18/12 17:45	1
3 & 4 Methylphenol	<1.2	U	9.5	1.2	ug/L		04/11/12 14:59	04/18/12 17:45	1
Diethyl phthalate	<0.83	U	9.5	0.83	ug/L		04/11/12 14:59	04/18/12 17:45	1
4-Chlorophenyl phenyl ether	<0.80	U	9.5	0.80	ug/L		04/11/12 14:59	04/18/12 17:45	1
Fluorene	<0.91	U	9.5	0.91	ug/L		04/11/12 14:59	04/18/12 17:45	1
4-Nitroaniline	<4.7	U	47	4.7	ug/L		04/11/12 14:59	04/18/12 17:45	1
4,6-Dinitro-2-methylphenol	<9.5	U	47	9.5	ug/L		04/11/12 14:59	04/18/12 17:45	1
N-Nitrosodiphenylamine	<0.87	U	9.5	0.87	ug/L		04/11/12 14:59	04/18/12 17:45	1
4-Bromophenyl phenyl ether	<0.73	U	9.5	0.73	ug/L		04/11/12 14:59	04/18/12 17:45	1
Hexachlorobenzene	<0.75	U	9.5	0.75	ug/L		04/11/12 14:59	04/18/12 17:45	1
Pentachlorophenol	<1.9	U	47	1.9	ug/L		04/11/12 14:59	04/18/12 17:45	1
Phanthrene	<0.73	U	9.5	0.73	ug/L		04/11/12 14:59	04/18/12 17:45	1
Anthracene	<0.65	U	9.5	0.65	ug/L		04/11/12 14:59	04/18/12 17:45	1
Di-n-butyl phthalate	<0.79	U	9.5	0.79	ug/L		04/11/12 14:59	04/18/12 17:45	1
Fluoranthene	<0.70	U	9.5	0.70	ug/L		04/11/12 14:59	04/18/12 17:45	1
Pyrene	<0.60	U	9.5	0.60	ug/L		04/11/12 14:59	04/18/12 17:45	1
Butyl benzyl phthalate	5.2	I	9.5	1.1	ug/L		04/11/12 14:59	04/18/12 17:45	1
3,3'-Dichlorobenzidine	<28	U	57	28	ug/L		04/11/12 14:59	04/18/12 17:45	1
Benzo[a]anthracene	<0.52	U	9.5	0.52	ug/L		04/11/12 14:59	04/18/12 17:45	1
Bis(2-ethylhexyl) phthalate	<1.5	U	9.5	1.5	ug/L		04/11/12 14:59	04/18/12 17:45	1
Chrysene	<0.48	U	9.5	0.48	ug/L		04/11/12 14:59	04/18/12 17:45	1
1,4-Dioxane	<3.2	U	9.5	3.2	ug/L		04/11/12 14:59	04/18/12 17:45	1
Di-n-octyl phthalate	<1.3	U	9.5	1.3	ug/L		04/11/12 14:59	04/18/12 17:45	1
Benzo[b]fluoranthene	<2.5	U	9.5	2.5	ug/L		04/11/12 14:59	04/18/12 17:45	1
Benzo[k]fluoranthene	<1.1	U	9.5	1.1	ug/L		04/11/12 14:59	04/18/12 17:45	1
Benzo[a]pyrene	<0.67	U	9.5	0.67	ug/L		04/11/12 14:59	04/18/12 17:45	1
Indeno[1,2,3-cd]pyrene	<0.95	U	9.5	0.95	ug/L		04/11/12 14:59	04/18/12 17:45	1
Dibenz(a,h)anthracene	<0.95	U	9.5	0.95	ug/L		04/11/12 14:59	04/18/12 17:45	1
Benzof[g,h,i]perylene	<0.82	U	9.5	0.82	ug/L		04/11/12 14:59	04/18/12 17:45	1
Carbazole	<0.67	U	9.5	0.67	ug/L		04/11/12 14:59	04/18/12 17:45	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Phenol-d5	68		25 - 130			04/11/12 14:59	04/18/12 17:45	1	
2-Fluorophenol	71		25 - 130			04/11/12 14:59	04/18/12 17:45	1	
2,4,6-Tribromophenol	82		31 - 141			04/11/12 14:59	04/18/12 17:45	1	
Nitrobenzene-d5	79		39 - 130			04/11/12 14:59	04/18/12 17:45	1	
2-Fluorobiphenyl	70		38 - 130			04/11/12 14:59	04/18/12 17:45	1	
Terphenyl-d14	26		10 - 143			04/11/12 14:59	04/18/12 17:45	1	

Surrogate Summary

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		TOL (70-130)	BFB (70-130)	DBFM (70-130)
680-78423-3	RW-4	111	92	91
680-78423-4	RW-6	112	91	92
LCS 680-234405/4	Lab Control Sample	96	97	100
LCSD 680-234405/5	Lab Control Sample Dup	99	102	103
MB 680-234405/7	Method Blank	105	98	102

Surrogate Legend

TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		PHL (25-130)	2FP (25-130)	TBP (31-141)	NBZ (39-130)	FBP (38-130)	TPH (10-143)
680-78423-3	RW-4	65	67	85	77	75	39
680-78423-4	RW-6	68	71	82	79	70	26
LCS 680-233943/11-A	Lab Control Sample	73	70	80	80	74	67
MB 680-233943/10-A	Method Blank	74	76	74	78	70	76

Surrogate Legend

PHL = Phenol-d5
2FP = 2-Fluorophenol
TBP = 2,4,6-Tribromophenol
NBZ = Nitrobenzene-d5
FBP = 2-Fluorobiphenyl
TPH = Terphenyl-d14

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-234405/7

Matrix: Water

Analysis Batch: 234405

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloromethane	<0.33	U	1.0	0.33	ug/L			04/16/12 11:46	1
Bromomethane	<0.80	U	1.0	0.80	ug/L			04/16/12 11:46	1
Vinyl chloride	<0.18	U	1.0	0.18	ug/L			04/16/12 11:46	1
Chloroethane	<1.0	U	1.0	1.0	ug/L			04/16/12 11:46	1
Methylene Chloride	<1.0	U	5.0	1.0	ug/L			04/16/12 11:46	1
Acetone	<5.0	U	25	5.0	ug/L			04/16/12 11:46	1
Carbon disulfide	<0.60	U	2.0	0.60	ug/L			04/16/12 11:46	1
1,1-Dichloroethene	<0.11	U	1.0	0.11	ug/L			04/16/12 11:46	1
1,1-Dichloroethane	<0.25	U	1.0	0.25	ug/L			04/16/12 11:46	1
cis-1,2-Dichloroethene	<0.15	U	1.0	0.15	ug/L			04/16/12 11:46	1
trans-1,2-Dichloroethene	<0.20	U	1.0	0.20	ug/L			04/16/12 11:46	1
Chloroform	<0.14	U	1.0	0.14	ug/L			04/16/12 11:46	1
1,2-Dichloroethane	<0.10	U	1.0	0.10	ug/L			04/16/12 11:46	1
2-Butanone (MEK)	<1.0	U	10	1.0	ug/L			04/16/12 11:46	1
1,1,1-Trichloroethane	<0.50	U	1.0	0.50	ug/L			04/16/12 11:46	1
Carbon tetrachloride	<0.50	U	1.0	0.50	ug/L			04/16/12 11:46	1
Dichlorobromomethane	<0.25	U	1.0	0.25	ug/L			04/16/12 11:46	1
1,1,2,2-Tetrachloroethane	<0.18	U	1.0	0.18	ug/L			04/16/12 11:46	1
1,2-Dichloropropane	<0.13	U	1.0	0.13	ug/L			04/16/12 11:46	1
trans-1,3-Dichloropropene	<0.21	U	1.0	0.21	ug/L			04/16/12 11:46	1
Trichloroethene	<0.13	U	1.0	0.13	ug/L			04/16/12 11:46	1
Chlorodibromomethane	<0.10	U	1.0	0.10	ug/L			04/16/12 11:46	1
1,1,2-Trichloroethane	<0.13	U	1.0	0.13	ug/L			04/16/12 11:46	1
Benzene	<0.25	U	1.0	0.25	ug/L			04/16/12 11:46	1
cis-1,3-Dichloropropene	<0.11	U	1.0	0.11	ug/L			04/16/12 11:46	1
Bromoform	<0.50	U	1.0	0.50	ug/L			04/16/12 11:46	1
2-Hexanone	<1.0	U	10	1.0	ug/L			04/16/12 11:46	1
4-Methyl-2-pentanone (MIBK)	<1.0	U	10	1.0	ug/L			04/16/12 11:46	1
Tetrachloroethene	<0.15	U	1.0	0.15	ug/L			04/16/12 11:46	1
Toluene	<0.33	U	1.0	0.33	ug/L			04/16/12 11:46	1
Chlorobenzene	<0.25	U	1.0	0.25	ug/L			04/16/12 11:46	1
Ethylbenzene	<0.11	U	1.0	0.11	ug/L			04/16/12 11:46	1
Styrene	<0.11	U	1.0	0.11	ug/L			04/16/12 11:46	1
Xylenes, Total	<0.20	U	2.0	0.20	ug/L			04/16/12 11:46	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	105		70 - 130		04/16/12 11:46	1
4-Bromofluorobenzene	98		70 - 130		04/16/12 11:46	1
Dibromofluoromethane	102		70 - 130		04/16/12 11:46	1

Lab Sample ID: LCS 680-234405/4

Matrix: Water

Analysis Batch: 234405

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS		Unit	D	%Rec	Limits
	Added	Result	Qualifier				
Chloromethane	50.0	44.9		ug/L	90	70 - 130	
Bromomethane	50.0	34.7		ug/L	69	23 - 165	
Vinyl chloride	50.0	50.0		ug/L	100	67 - 134	
Chloroethane	50.0	44.0		ug/L	88	56 - 152	

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-234405/4

Matrix: Water

Analysis Batch: 234405

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec.
		Result	Qualifier				
Methylene Chloride	50.0	48.9		ug/L		98	67 - 130
Acetone	100	95.1		ug/L		95	26 - 180
Carbon disulfide	50.0	48.6		ug/L		97	54 - 132
1,1-Dichloroethene	50.0	49.7		ug/L		99	66 - 131
1,1-Dichloroethane	50.0	49.1		ug/L		98	70 - 130
cis-1,2-Dichloroethene	50.0	49.1		ug/L		98	70 - 130
trans-1,2-Dichloroethene	50.0	49.1		ug/L		98	70 - 130
Chloroform	50.0	49.2		ug/L		98	70 - 130
1,2-Dichloroethane	50.0	46.0		ug/L		92	70 - 130
2-Butanone (MEK)	100	91.6		ug/L		92	49 - 172
1,1,1-Trichloroethane	50.0	46.0		ug/L		92	70 - 130
Carbon tetrachloride	50.0	33.7	J	ug/L		67	70 - 130
Dichlorobromomethane	50.0	45.9		ug/L		92	70 - 130
1,1,2,2-Tetrachloroethane	50.0	47.5		ug/L		95	70 - 130
1,2-Dichloropropane	50.0	48.4		ug/L		97	70 - 130
trans-1,3-Dichloropropene	50.0	46.7		ug/L		93	70 - 130
Trichloroethene	50.0	49.3		ug/L		99	70 - 130
Chlorodibromomethane	50.0	35.4		ug/L		71	70 - 130
1,1,2-Trichloroethane	50.0	48.8		ug/L		98	70 - 130
Benzene	50.0	46.9		ug/L		94	70 - 130
cis-1,3-Dichloropropene	50.0	47.4		ug/L		95	70 - 130
Bromoform	50.0	38.0		ug/L		76	70 - 130
2-Hexanone	100	101		ug/L		101	42 - 185
4-Methyl-2-pentanone (MIBK)	100	91.9		ug/L		92	70 - 130
Tetrachloroethene	50.0	49.0		ug/L		98	70 - 130
Toluene	50.0	46.4		ug/L		93	70 - 130
Chlorobenzene	50.0	48.2		ug/L		96	70 - 130
Ethylbenzene	50.0	48.2		ug/L		96	70 - 130
Styrene	50.0	49.9		ug/L		100	70 - 130
Xylenes, Total	150	148		ug/L		98	70 - 130

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	96		70 - 130
4-Bromofluorobenzene	97		70 - 130
Dibromofluoromethane	100		70 - 130

Lab Sample ID: LCSD 680-234405/5

Matrix: Water

Analysis Batch: 234405

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD		Unit	D	%Rec	%Rec.	RPD	RPD
		Result	Qualifier						
Chloromethane	50.0	46.9		ug/L		94	70 - 130	4.33	30
Bromomethane	50.0	38.6		ug/L		77	23 - 165	10.6	50
Vinyl chloride	50.0	51.3		ug/L		103	67 - 134	2.49	30
Chloroethane	50.0	45.8		ug/L		92	56 - 152	3.90	40
Methylene Chloride	50.0	51.1		ug/L		102	67 - 130	4.36	30
Acetone	100	99.0		ug/L		99	26 - 180	4.01	50
Carbon disulfide	50.0	51.2		ug/L		102	54 - 132	5.04	30
1,1-Dichloroethene	50.0	51.1		ug/L		102	66 - 131	2.74	30

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-234405/5

Matrix: Water

Analysis Batch: 234405

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	Limits	RPD	RPD Limit
	Added	Result	Qualifier						
1,1-Dichloroethane	50.0	50.8		ug/L		102	70 - 130	3.38	30
cis-1,2-Dichloroethene	50.0	50.5		ug/L		101	70 - 130	2.66	30
trans-1,2-Dichloroethene	50.0	50.7		ug/L		101	70 - 130	3.21	30
Chloroform	50.0	51.1		ug/L		102	70 - 130	3.80	30
1,2-Dichloroethane	50.0	46.9		ug/L		94	70 - 130	1.93	30
2-Butanone (MEK)	100	95.4		ug/L		95	49 - 172	4.03	30
1,1,1-Trichloroethane	50.0	48.4		ug/L		97	70 - 130	4.94	30
Carbon tetrachloride	50.0	37.9		ug/L		76	70 - 130	11.7	30
Dichlorobromomethane	50.0	48.6		ug/L		97	70 - 130	5.70	30
1,1,2,2-Tetrachloroethane	50.0	50.2		ug/L		100	70 - 130	5.68	30
1,2-Dichloropropane	50.0	49.8		ug/L		100	70 - 130	2.79	30
trans-1,3-Dichloropropene	50.0	49.0		ug/L		98	70 - 130	4.89	50
Trichloroethene	50.0	51.7		ug/L		103	70 - 130	4.88	30
Chlorodibromomethane	50.0	38.8		ug/L		78	70 - 130	9.28	50
1,1,2-Trichloroethane	50.0	49.2		ug/L		98	70 - 130	1.00	30
Benzene	50.0	48.7		ug/L		97	70 - 130	3.78	30
cis-1,3-Dichloropropene	50.0	49.6		ug/L		99	70 - 130	4.70	30
Bromoform	50.0	41.3		ug/L		83	70 - 130	8.28	30
2-Hexanone	100	105		ug/L		105	42 - 185	3.94	30
4-Methyl-2-pentanone (MIBK)	100	96.1		ug/L		96	70 - 130	4.47	30
Tetrachloroethene	50.0	51.3		ug/L		103	70 - 130	4.69	30
Toluene	50.0	47.9		ug/L		96	70 - 130	3.26	30
Chlorobenzene	50.0	49.8		ug/L		100	70 - 130	3.41	30
Ethylbenzene	50.0	50.6		ug/L		101	70 - 130	4.82	30
Styrene	50.0	51.7		ug/L		103	70 - 130	3.38	30
Xylenes, Total	150	153		ug/L		102	70 - 130	3.29	30
Surrogate		LCSD	LCSD						
		%Recovery	Qualifier	Limits					
<i>Toluene-d8 (Surr)</i>		99		70 - 130					
<i>4-Bromofluorobenzene</i>		102		70 - 130					
<i>Dibromofluoromethane</i>		103		70 - 130					

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 660-123268/8

Matrix: Water

Analysis Batch: 123268

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	<1.0	U	2.0	1.0	ug/L			04/12/12 10:00	1

Lab Sample ID: LCS 660-123268/4

Matrix: Water

Analysis Batch: 123268

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCs	LCs	Unit	D	%Rec	Limits
	Added	Result	Qualifier				
1,4-Dioxane	25.0	21.8		ug/L		87	50 - 150

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Method: 8260C SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 660-123268/5

Matrix: Water

Analysis Batch: 123268

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec.	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	25.0	22.7		ug/L	91	50 - 150	4	50	

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-233943/10-A

Matrix: Water

Analysis Batch: 234885

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 233943

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	<0.83	U	10	0.83	ug/L		04/11/12 14:59	04/18/12 14:58	1
Bis(2-chloroethyl)ether	<1.1	U	10	1.1	ug/L		04/11/12 14:59	04/18/12 14:58	1
bis(chloroisopropyl) ether	<0.78	U	10	0.78	ug/L		04/11/12 14:59	04/18/12 14:58	1
2-Chlorophenol	<0.87	U	10	0.87	ug/L		04/11/12 14:59	04/18/12 14:58	1
1,3-Dichlorobenzene	<0.59	U	10	0.59	ug/L		04/11/12 14:59	04/18/12 14:58	1
1,4-Dichlorobenzene	<0.54	U	10	0.54	ug/L		04/11/12 14:59	04/18/12 14:58	1
1,2-Dichlorobenzene	<0.53	U	10	0.53	ug/L		04/11/12 14:59	04/18/12 14:58	1
2-Methylphenol	<0.89	U	10	0.89	ug/L		04/11/12 14:59	04/18/12 14:58	1
N-Nitrosodi-n-propylamine	<0.72	U	10	0.72	ug/L		04/11/12 14:59	04/18/12 14:58	1
Benzoic acid	<5.0	U	50	5.0	ug/L		04/11/12 14:59	04/18/12 14:58	1
Hexachloroethane	<0.76	U	10	0.76	ug/L		04/11/12 14:59	04/18/12 14:58	1
Nitrobenzene	<0.73	U	10	0.73	ug/L		04/11/12 14:59	04/18/12 14:58	1
Isophorone	<0.90	U	10	0.90	ug/L		04/11/12 14:59	04/18/12 14:58	1
2-Nitrophenol	<0.76	U	10	0.76	ug/L		04/11/12 14:59	04/18/12 14:58	1
2,4-Dimethylphenol	<4.0	U	10	4.0	ug/L		04/11/12 14:59	04/18/12 14:58	1
Bis(2-chloroethoxy)methane	<0.94	U	10	0.94	ug/L		04/11/12 14:59	04/18/12 14:58	1
2,4-Dichlorophenol	<1.1	U	10	1.1	ug/L		04/11/12 14:59	04/18/12 14:58	1
Benzyl alcohol	<1.1	U	10	1.1	ug/L		04/11/12 14:59	04/18/12 14:58	1
1,2,4-Trichlorobenzene	<0.56	U	10	0.56	ug/L		04/11/12 14:59	04/18/12 14:58	1
Naphthalene	<0.70	U	10	0.70	ug/L		04/11/12 14:59	04/18/12 14:58	1
4-Chloroaniline	<2.2	U	20	2.2	ug/L		04/11/12 14:59	04/18/12 14:58	1
Hexachlorobutadiene	<0.62	U	10	0.62	ug/L		04/11/12 14:59	04/18/12 14:58	1
4-Chloro-3-methylphenol	<1.0	U	10	1.0	ug/L		04/11/12 14:59	04/18/12 14:58	1
2-Methylnaphthalene	<0.78	U	10	0.78	ug/L		04/11/12 14:59	04/18/12 14:58	1
Hexachlorocyclopentadiene	<2.5	U	10	2.5	ug/L		04/11/12 14:59	04/18/12 14:58	1
2,4,6-Trichlorophenol	<0.85	U	10	0.85	ug/L		04/11/12 14:59	04/18/12 14:58	1
2,4,5-Trichlorophenol	<1.2	U	10	1.2	ug/L		04/11/12 14:59	04/18/12 14:58	1
2-Chloronaphthalene	<0.80	U	10	0.80	ug/L		04/11/12 14:59	04/18/12 14:58	1
2-Nitroaniline	<1.3	U	50	1.3	ug/L		04/11/12 14:59	04/18/12 14:58	1
Dimethyl phthalate	<0.99	U	10	0.99	ug/L		04/11/12 14:59	04/18/12 14:58	1
Acenaphthylene	<0.85	U	10	0.85	ug/L		04/11/12 14:59	04/18/12 14:58	1
3-Nitroaniline	<5.0	U	50	5.0	ug/L		04/11/12 14:59	04/18/12 14:58	1
Acenaphthene	<0.76	U	10	0.76	ug/L		04/11/12 14:59	04/18/12 14:58	1
2,4-Dinitrophenol	<10	U	50	10	ug/L		04/11/12 14:59	04/18/12 14:58	1
4-Nitrophenol	<1.9	U	50	1.9	ug/L		04/11/12 14:59	04/18/12 14:58	1
Dibenzofuran	<0.79	U	10	0.79	ug/L		04/11/12 14:59	04/18/12 14:58	1
2,4-Dinitrotoluene	<1.2	U	10	1.2	ug/L		04/11/12 14:59	04/18/12 14:58	1
2,6-Dinitrotoluene	<1.1	U	10	1.1	ug/L		04/11/12 14:59	04/18/12 14:58	1
3 & 4 Methylphenol	<1.3	U	10	1.3	ug/L		04/11/12 14:59	04/18/12 14:58	1
Diethyl phthalate	<0.88	U	10	0.88	ug/L		04/11/12 14:59	04/18/12 14:58	1

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-233943/10-A

Matrix: Water

Analysis Batch: 234885

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 233943

Analyte	MB		RL	MDL	Unit	D	Prepared		Analyzed	Dil Fac
	Result	Qualifier					Prepared	Analyzed		
4-Chlorophenyl phenyl ether	<0.84	U	10	0.84	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Fluorene	<0.96	U	10	0.96	ug/L	04/11/12 14:59	04/18/12 14:58		1	
4-Nitroaniline	<5.0	U	50	5.0	ug/L	04/11/12 14:59	04/18/12 14:58		1	
4,6-Dinitro-2-methylphenol	<10	U	50	10	ug/L	04/11/12 14:59	04/18/12 14:58		1	
N-Nitrosodiphenylamine	<0.92	U	10	0.92	ug/L	04/11/12 14:59	04/18/12 14:58		1	
4-Bromophenyl phenyl ether	<0.77	U	10	0.77	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Hexachlorobenzene	<0.79	U	10	0.79	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Pentachlorophenol	<2.0	U	50	2.0	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Phenanthrene	<0.77	U	10	0.77	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Anthracene	<0.69	U	10	0.69	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Di-n-butyl phthalate	<0.83	U	10	0.83	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Fluoranthene	<0.74	U	10	0.74	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Pyrene	<0.63	U	10	0.63	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Butyl benzyl phthalate	<1.2	U	10	1.2	ug/L	04/11/12 14:59	04/18/12 14:58		1	
3,3'-Dichlorobenzidine	<30	U	60	30	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Benzo[a]anthracene	<0.55	U	10	0.55	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Bis(2-ethylhexyl) phthalate	<1.6	U	10	1.6	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Chrysene	<0.51	U	10	0.51	ug/L	04/11/12 14:59	04/18/12 14:58		1	
1,4-Dioxane	<3.4	U	10	3.4	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Di-n-octyl phthalate	<1.4	U	10	1.4	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Benzo[b]fluoranthene	<2.6	U	10	2.6	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Benzo[k]fluoranthene	<1.2	U	10	1.2	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Benzo[a]pyrene	<0.71	U	10	0.71	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Indeno[1,2,3-cd]pyrene	<1.0	U	10	1.0	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Dibenz(a,h)anthracene	<1.0	U	10	1.0	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Benzo[g,h,i]perylene	<0.87	U	10	0.87	ug/L	04/11/12 14:59	04/18/12 14:58		1	
Carbazole	<0.71	U	10	0.71	ug/L	04/11/12 14:59	04/18/12 14:58		1	

MB MB

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
Phenol-d5	74		25 - 130		04/11/12 14:59	04/18/12 14:58	1
2-Fluorophenol	76		25 - 130		04/11/12 14:59	04/18/12 14:58	1
2,4,6-Tribromophenol	74		31 - 141		04/11/12 14:59	04/18/12 14:58	1
Nitrobenzene-d5	78		39 - 130		04/11/12 14:59	04/18/12 14:58	1
2-Fluorobiphenyl	70		38 - 130		04/11/12 14:59	04/18/12 14:58	1
Terphenyl-d14	76		10 - 143		04/11/12 14:59	04/18/12 14:58	1

Lab Sample ID: LCS 680-233943/11-A

Matrix: Water

Analysis Batch: 234885

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 233943

Analyte	Spike Added	LCS			Unit	D	%Rec	Limits
		Result	Qualifier					
Phenol	100	66.8			ug/L	67	29 - 130	
Bis(2-chloroethyl)ether	100	87.4			ug/L	87	56 - 130	
bis(chloroisopropyl) ether	100	93.1			ug/L	93	55 - 130	
2-Chlorophenol	100	72.9			ug/L	73	57 - 130	
1,3-Dichlorobenzene	100	56.3			ug/L	56	41 - 130	
1,4-Dichlorobenzene	100	57.2			ug/L	57	43 - 130	
1,2-Dichlorobenzene	100	58.9			ug/L	59	43 - 130	
2-Methylphenol	100	74.7			ug/L	75	55 - 130	

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-233943/11-A

Matrix: Water

Analysis Batch: 234885

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 233943

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec.	Limits
		Result	Qualifier					
N-Nitrosodi-n-propylamine	100	93.4		ug/L		93	64 - 130	
Benzoic acid	100	33.8	I	ug/L		34	10 - 130	
Hexachloroethane	100	62.1		ug/L		62	39 - 130	
Nitrobenzene	100	77.3		ug/L		77	56 - 130	
Isophorone	100	81.8		ug/L		82	59 - 130	
2-Nitrophenol	100	72.9		ug/L		73	54 - 130	
2,4-Dimethylphenol	100	66.2		ug/L		66	40 - 130	
Bis(2-chloroethoxy)methane	100	87.5		ug/L		88	64 - 130	
2,4-Dichlorophenol	100	70.6		ug/L		71	54 - 130	
Benzyl alcohol	100	49.5	J	ug/L		49	53 - 130	
1,2,4-Trichlorobenzene	100	59.0		ug/L		59	42 - 130	
Naphthalene	100	69.5		ug/L		69	50 - 130	
4-Chloroaniline	100	41.2	J	ug/L		41	42 - 130	
Hexachlorobutadiene	100	60.5		ug/L		60	36 - 130	
4-Chloro-3-methylphenol	100	76.6		ug/L		77	60 - 130	
2-Methylnaphthalene	100	70.2		ug/L		70	52 - 130	
Hexachlorocyclopentadiene	100	36.3		ug/L		36	10 - 130	
2,4,6-Trichlorophenol	100	74.3		ug/L		74	57 - 130	
2,4,5-Trichlorophenol	100	74.1		ug/L		74	61 - 130	
2-Chloronaphthalene	100	67.2		ug/L		67	53 - 130	
2-Nitroaniline	100	93.7		ug/L		94	60 - 130	
Dimethyl phthalate	100	85.4		ug/L		85	69 - 130	
Acenaphthylene	100	79.0		ug/L		79	60 - 130	
3-Nitroaniline	100	73.5		ug/L		73	54 - 130	
Acenaphthene	100	72.4		ug/L		72	55 - 130	
2,4-Dinitrophenol	100	99.8		ug/L		100	20 - 165	
4-Nitrophenol	100	75.6		ug/L		76	38 - 130	
Dibenzofuran	100	76.6		ug/L		77	58 - 130	
2,4-Dinitrotoluene	100	81.2		ug/L		81	63 - 130	
2,6-Dinitrotoluene	100	80.3		ug/L		80	65 - 130	
3 & 4 Methylphenol	100	75.8		ug/L		76	35 - 130	
Diethyl phthalate	100	92.6		ug/L		93	70 - 130	
4-Chlorophenyl phenyl ether	100	77.9		ug/L		78	57 - 130	
Fluorene	100	74.4		ug/L		74	61 - 130	
4-Nitroaniline	100	78.8		ug/L		79	54 - 130	
4,6-Dinitro-2-methylphenol	100	86.2		ug/L		86	45 - 134	
N-Nitrosodiphenylamine	100	81.0		ug/L		81	68 - 130	
4-Bromophenyl phenyl ether	100	73.6		ug/L		74	61 - 130	
Hexachlorobenzene	100	60.7		ug/L		61	52 - 130	
Pentachlorophenol	100	70.9		ug/L		71	42 - 138	
Phenanthrrene	100	71.6		ug/L		72	62 - 130	
Anthracene	100	69.0		ug/L		69	61 - 130	
Di-n-butyl phthalate	100	80.9		ug/L		81	66 - 130	
Fluoranthene	100	73.8		ug/L		74	56 - 130	
Pyrene	100	72.5		ug/L		73	60 - 130	
Butyl benzyl phthalate	100	79.4		ug/L		79	66 - 130	
3,3'-Dichlorobenzidine	100	46.9	I	ug/L		47	27 - 130	
Benzo[a]anthracene	100	68.5		ug/L		69	58 - 130	
Bis(2-ethylhexyl) phthalate	100	73.2		ug/L		73	62 - 130	
Chrysene	100	67.1		ug/L		67	59 - 130	

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-233943/11-A

Matrix: Water

Analysis Batch: 234885

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 233943

Analyte	Spike Added	LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
1,4-Dioxane	100	54.9		ug/L		55	35 - 130
Di-n-octyl phthalate	100	72.6		ug/L		73	64 - 130
Benzo[b]fluoranthene	100	72.3		ug/L		72	51 - 130
Benzo[k]fluoranthene	100	67.9		ug/L		68	53 - 130
Benzo[a]pyrene	100	73.1		ug/L		73	61 - 130
Indeno[1,2,3-cd]pyrene	100	67.5		ug/L		68	47 - 130
Dibenz(a,h)anthracene	100	68.7		ug/L		69	55 - 130
Benzo[g,h,i]perylene	100	67.0		ug/L		67	54 - 130
Carbazole	100	81.3		ug/L		81	67 - 130

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Phenol-d5	73		25 - 130
2-Fluorophenol	70		25 - 130
2,4,6-Tribromophenol	80		31 - 141
Nitrobenzene-d5	80		39 - 130
2-Fluorobiphenyl	74		38 - 130
Terphenyl-d14	67		10 - 143

Lab Chronicle

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Client Sample ID: RW-4

Lab Sample ID: 680-78423-3

Matrix: Water

Date Collected: 04/09/12 07:45

Date Received: 04/10/12 09:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	123268	04/12/12 12:08	AP	TAL TAM
Total/NA	Analysis	8260B		1	234405	04/16/12 18:56	AJMC	TAL SAV
Total/NA	Prep	3520C			233943	04/11/12 14:59	RBS	TAL SAV
Total/NA	Analysis	8270C		1	234885	04/18/12 17:17	MES	TAL SAV

Client Sample ID: RW-6

Lab Sample ID: 680-78423-4

Matrix: Water

Date Collected: 04/09/12 08:00

Date Received: 04/10/12 09:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	123268	04/12/12 12:26	AP	TAL TAM
Total/NA	Analysis	8260B		1	234405	04/16/12 19:25	AJMC	TAL SAV
Total/NA	Prep	3520C			233943	04/11/12 14:59	RBS	TAL SAV
Total/NA	Analysis	8270C		1	234885	04/18/12 17:45	MES	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericanainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE <i>Recovery Wells 4-16</i>	PROJECT NO.	PROJECT LOCATION (STATE)	MATRIX TYPE	REQUIRED ANALYSIS					PAGE <u>1</u> OF <u>1</u>	
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.							STANDARD REPORT DELIVERY	
CLIENT (SITE) PM <i>R. DUNIGAN</i>	CLIENT PHONE <i>904 825-3828</i>	CLIENT FAX							DATE DUE <u> </u>	
CLIENT NAME <i>Northeast Grammar</i>	CLIENT E-MAIL								EXPEDITED REPORT DELIVERY (SURCHARGE)	
CLIENT ADDRESS <i>5800 US1 NORTH ST. AUGUSTA, GA 30905</i>	COMPANY CONTRACTING THIS WORK (if applicable)								DATE DUE <u> </u>	
SAMPLE		SAMPLE IDENTIFICATION			NUMBER OF CONTAINERS SUBMITTED					REMARKS
DATE	TIME	RW-4	GX	AIR	2	3	3			
4-4-12	0745	RW-4	GX	AIR	2	3	3			
4-4-12	0800	RW-6	GX	AIR	2	3	3			
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	
<i>Stewart</i>				<i>Stewart</i>	<i>4-4-12</i>	<i>1:00pm</i>				
RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	
<i>Test America</i>				<i>Test America</i>	<i>4-4-12</i>	<i>1:00pm</i>				
LABORATORY USE ONLY										
RECEIVED FOR LABORATORY BY: (SIGNATURE) <i>Holter</i>	DATE <i>4-10-12</i>	TIME <i>0:00</i>	CUSTODY INTACT YES <input checked="" type="radio"/> NO <input type="radio"/>	CUSTODY SEAL NO.	SAVANNAH LOG NO. <i>680-7878</i>	LABORATORY REMARKS <i>2.0°C</i>				

Certification Summary

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Savannah	A2LA	DoD ELAP		0399-01
TestAmerica Savannah	A2LA	ISO/IEC 17025		399.01
TestAmerica Savannah	Alabama	State Program	4	41450
TestAmerica Savannah	Arkansas	State Program	6	N/A
TestAmerica Savannah	Arkansas DEQ	State Program	6	88-0692
TestAmerica Savannah	California	NELAC	9	3217CA
TestAmerica Savannah	Colorado	State Program	8	N/A
TestAmerica Savannah	Connecticut	State Program	1	PH-0161
TestAmerica Savannah	Florida	NELAC	4	E87052
TestAmerica Savannah	GA Dept. of Agriculture	State Program	4	N/A
TestAmerica Savannah	Georgia	State Program	4	803
TestAmerica Savannah	Georgia	State Program	4	N/A
TestAmerica Savannah	Guam	State Program	9	09-005r
TestAmerica Savannah	Hawaii	State Program	9	N/A
TestAmerica Savannah	Illinois	NELAC	5	200022
TestAmerica Savannah	Indiana	State Program	5	N/A
TestAmerica Savannah	Iowa	State Program	7	353
TestAmerica Savannah	Kentucky	State Program	4	90084
TestAmerica Savannah	Kentucky (UST)	State Program	4	18
TestAmerica Savannah	Louisiana	NELAC	6	30690
TestAmerica Savannah	Louisiana	NELAC	6	LA100015
TestAmerica Savannah	Maine	State Program	1	GA00006
TestAmerica Savannah	Maryland	State Program	3	250
TestAmerica Savannah	Massachusetts	State Program	1	M-GA006
TestAmerica Savannah	Michigan	State Program	5	9925
TestAmerica Savannah	Mississippi	State Program	4	N/A
TestAmerica Savannah	Montana	State Program	8	CERT0081
TestAmerica Savannah	Nebraska	State Program	7	TestAmerica-Savannah
TestAmerica Savannah	New Jersey	NELAC	2	GA769
TestAmerica Savannah	New Mexico	State Program	6	N/A
TestAmerica Savannah	New York	NELAC	2	10842
TestAmerica Savannah	North Carolina DENR	State Program	4	269
TestAmerica Savannah	North Carolina DHHS	State Program	4	13701
TestAmerica Savannah	Oklahoma	State Program	6	9984
TestAmerica Savannah	Pennsylvania	NELAC	3	68-00474
TestAmerica Savannah	Puerto Rico	State Program	2	GA00006
TestAmerica Savannah	Rhode Island	State Program	1	LAO00244
TestAmerica Savannah	South Carolina	State Program	4	98001
TestAmerica Savannah	Tennessee	State Program	4	TN02961
TestAmerica Savannah	Texas	NELAC	6	T104704185-08-TX
TestAmerica Savannah	USDA	Federal		SAV 3-04
TestAmerica Savannah	Vermont	State Program	1	87052
TestAmerica Savannah	Virginia	NELAC	3	460161
TestAmerica Savannah	Washington	State Program	10	C1794
TestAmerica Savannah	West Virginia	State Program	3	9950C
TestAmerica Savannah	West Virginia DEP	State Program	3	94
TestAmerica Savannah	Wisconsin	State Program	5	999819810
TestAmerica Savannah	Wyoming	State Program	8	8TMS-Q
TestAmerica Tampa	Alabama	State Program	4	40610
TestAmerica Tampa	Florida	NELAC	4	E84282
TestAmerica Tampa	Georgia	State Program	4	905
TestAmerica Tampa	USDA	Federal		P330-11-00177

Certification Summary

Client: Northrop Grumman Corp.
Project/Site: Recovery Wells 4-12

TestAmerica Job ID: 680-78423-2

Laboratory	Authority	Program	EPA Region	Certification ID
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Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-81065-2

Client Project/Site: Recovery Well 7-12

For:

Northrop Grumman Corp.

Integrated Systems

5000 U.S.#1 North

St. Augustine, Florida 32095

Attn: Mr. Rick Doria

Linda A. Wolfe

Authorized for release by:

7/23/2012 11:52:05 AM

Linda Wolfe

Project Manager I

linda.wolfe@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Sample Summary	4
Method Summary	5
Definitions	6
Client Sample Results	7
Surrogate Summary	12
QC Sample Results	13
Chronicle	21
Chain of Custody	22
Certification Summary	23

Case Narrative

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Job ID: 680-81065-2

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Northrop Grumman Corp.

Project: Recovery Well 7-12

Report Number: 680-81065-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 07/12/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.6 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples RW-4 (680-81065-3) and RW-6 (680-81065-4) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 07/13/2012.

No difficulties were encountered during the volatiles analyses.

All quality control parameters were within the acceptance limits.

VOLATILE ORGANIC COMPOUNDS (GC/MS) - SELECTED ION MONITORING (SIM)

Samples RW-4 (680-81065-3) and RW-6 (680-81065-4) were analyzed for Volatile Organic Compounds (GC/MS) - Selected Ion Monitoring (SIM) in accordance with EPA SW846 Method 8260C. The samples were analyzed on 07/16/2012.

No difficulties were encountered during the VOC SIM analyses.

All quality control parameters were within the acceptance limits.

SEMOVOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples RW-4 (680-81065-3) and RW-6 (680-81065-4) were analyzed for semivolatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 07/13/2012 and analyzed on 07/18/2012.

No difficulties were encountered during the semivolatiles analyses.

All quality control parameters were within the acceptance limits.

Sample Summary

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-81065-3	RW-4	Water	07/11/12 07:00	07/12/12 09:36
680-81065-4	RW-6	Water	07/11/12 07:20	07/12/12 09:36

Method Summary

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8260C SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL TAM
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

Definitions/Glossary

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

Glossary

Abbreviation

These commonly used abbreviations may or may not be present in this report.

☒	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Client Sample ID: RW-4

Date Collected: 07/11/12 07:00

Date Received: 07/12/12 09:36

Lab Sample ID: 680-81065-3

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	<0.33	U	1.0	0.33	ug/L			07/13/12 14:35	1
Bromomethane	<0.80	U	1.0	0.80	ug/L			07/13/12 14:35	1
Vinyl chloride	0.65	I	1.0	0.18	ug/L			07/13/12 14:35	1
Chloroethane	<1.0	U	1.0	1.0	ug/L			07/13/12 14:35	1
Methylene Chloride	<1.0	U	5.0	1.0	ug/L			07/13/12 14:35	1
Acetone	<5.0	U	25	5.0	ug/L			07/13/12 14:35	1
Carbon disulfide	<0.60	U	2.0	0.60	ug/L			07/13/12 14:35	1
1,1-Dichloroethene	<0.11	U	1.0	0.11	ug/L			07/13/12 14:35	1
1,1-Dichloroethane	0.26	I	1.0	0.25	ug/L			07/13/12 14:35	1
cis-1,2-Dichloroethene	<0.15	U	1.0	0.15	ug/L			07/13/12 14:35	1
trans-1,2-Dichloroethene	<0.20	U	1.0	0.20	ug/L			07/13/12 14:35	1
Chloroform	<0.14	U	1.0	0.14	ug/L			07/13/12 14:35	1
1,2-Dichloroethane	<0.10	U	1.0	0.10	ug/L			07/13/12 14:35	1
2-Butanone (MEK)	<1.0	U	10	1.0	ug/L			07/13/12 14:35	1
1,1,1-Trichloroethane	<0.50	U	1.0	0.50	ug/L			07/13/12 14:35	1
Carbon tetrachloride	<0.50	U	1.0	0.50	ug/L			07/13/12 14:35	1
Dichlorobromomethane	<0.25	U	1.0	0.25	ug/L			07/13/12 14:35	1
1,1,2,2-Tetrachloroethane	<0.18	U	1.0	0.18	ug/L			07/13/12 14:35	1
1,2-Dichloropropane	<0.13	U	1.0	0.13	ug/L			07/13/12 14:35	1
trans-1,3-Dichloropropene	<0.21	U	1.0	0.21	ug/L			07/13/12 14:35	1
Trichloroethene	<0.13	U	1.0	0.13	ug/L			07/13/12 14:35	1
Chlorodibromomethane	<0.10	U	1.0	0.10	ug/L			07/13/12 14:35	1
1,1,2-Trichloroethane	<0.13	U	1.0	0.13	ug/L			07/13/12 14:35	1
Benzene	<0.25	U	1.0	0.25	ug/L			07/13/12 14:35	1
cis-1,3-Dichloropropene	<0.11	U	1.0	0.11	ug/L			07/13/12 14:35	1
Bromoform	<0.50	U	1.0	0.50	ug/L			07/13/12 14:35	1
2-Hexanone	<1.0	U	10	1.0	ug/L			07/13/12 14:35	1
4-Methyl-2-pentanone (MIBK)	<1.0	U	10	1.0	ug/L			07/13/12 14:35	1
Tetrachloroethene	<0.15	U	1.0	0.15	ug/L			07/13/12 14:35	1
Toluene	<0.33	U	1.0	0.33	ug/L			07/13/12 14:35	1
Chlorobenzene	<0.25	U	1.0	0.25	ug/L			07/13/12 14:35	1
Ethylbenzene	<0.11	U	1.0	0.11	ug/L			07/13/12 14:35	1
Styrene	<0.11	U	1.0	0.11	ug/L			07/13/12 14:35	1
Xylenes, Total	<0.20	U	2.0	0.20	ug/L			07/13/12 14:35	1
Surrogate	%Recovery	Qualifier	Limits			D	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130					07/13/12 14:35	1
4-Bromofluorobenzene	98		70 - 130					07/13/12 14:35	1
Dibromofluoromethane	101		70 - 130					07/13/12 14:35	1

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	<1.0	U	2.0	1.0	ug/L			07/16/12 15:02	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	<0.79	U	9.5	0.79	ug/L			07/13/12 15:51	1
Bis(2-chloroethyl)ether	<1.0	U	9.5	1.0	ug/L			07/13/12 15:51	1
bis(chloroisopropyl) ether	<0.74	U	9.5	0.74	ug/L			07/13/12 15:51	1
2-Chlorophenol	<0.82	U	9.5	0.82	ug/L			07/13/12 15:51	1
1,3-Dichlorobenzene	<0.56	U	9.5	0.56	ug/L			07/13/12 15:51	1

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Client Sample ID: RW-4

Lab Sample ID: 680-81065-3

Date Collected: 07/11/12 07:00

Matrix: Water

Date Received: 07/12/12 09:36

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	<0.51	U	9.5	0.51	ug/L	07/13/12 15:51	07/18/12 14:11		1
1,2-Dichlorobenzene	<0.50	U	9.5	0.50	ug/L	07/13/12 15:51	07/18/12 14:11		1
2-Methylphenol	<0.84	U	9.5	0.84	ug/L	07/13/12 15:51	07/18/12 14:11		1
N-Nitrosodi-n-propylamine	<0.68	U	9.5	0.68	ug/L	07/13/12 15:51	07/18/12 14:11		1
Benzoic acid	<4.7	U	47	4.7	ug/L	07/13/12 15:51	07/18/12 14:11		1
Hexachloroethane	<0.72	U	9.5	0.72	ug/L	07/13/12 15:51	07/18/12 14:11		1
Nitrobenzene	<0.69	U	9.5	0.69	ug/L	07/13/12 15:51	07/18/12 14:11		1
Isophorone	<0.85	U	9.5	0.85	ug/L	07/13/12 15:51	07/18/12 14:11		1
2-Nitrophenol	<0.72	U	9.5	0.72	ug/L	07/13/12 15:51	07/18/12 14:11		1
2,4-Dimethylphenol	<3.8	U	9.5	3.8	ug/L	07/13/12 15:51	07/18/12 14:11		1
Bis(2-chloroethoxy)methane	<0.89	U	9.5	0.89	ug/L	07/13/12 15:51	07/18/12 14:11		1
2,4-Dichlorophenol	<1.0	U	9.5	1.0	ug/L	07/13/12 15:51	07/18/12 14:11		1
Benzyl alcohol	<1.0	U	9.5	1.0	ug/L	07/13/12 15:51	07/18/12 14:11		1
1,2,4-Trichlorobenzene	<0.53	U	9.5	0.53	ug/L	07/13/12 15:51	07/18/12 14:11		1
Naphthalene	<0.66	U	9.5	0.66	ug/L	07/13/12 15:51	07/18/12 14:11		1
4-Chloroaniline	<2.1	U	19	2.1	ug/L	07/13/12 15:51	07/18/12 14:11		1
Hexachlorobutadiene	<0.59	U	9.5	0.59	ug/L	07/13/12 15:51	07/18/12 14:11		1
4-Chloro-3-methylphenol	<0.95	U	9.5	0.95	ug/L	07/13/12 15:51	07/18/12 14:11		1
2-Methylnaphthalene	<0.74	U	9.5	0.74	ug/L	07/13/12 15:51	07/18/12 14:11		1
Hexachlorocyclopentadiene	<2.4	U	9.5	2.4	ug/L	07/13/12 15:51	07/18/12 14:11		1
2,4,6-Trichlorophenol	<0.80	U	9.5	0.80	ug/L	07/13/12 15:51	07/18/12 14:11		1
2,4,5-Trichlorophenol	<1.1	U	9.5	1.1	ug/L	07/13/12 15:51	07/18/12 14:11		1
2-Chloronaphthalene	<0.76	U	9.5	0.76	ug/L	07/13/12 15:51	07/18/12 14:11		1
2-Nitroaniline	<1.2	U	47	1.2	ug/L	07/13/12 15:51	07/18/12 14:11		1
Dimethyl phthalate	<0.94	U	9.5	0.94	ug/L	07/13/12 15:51	07/18/12 14:11		1
Acenaphthylene	<0.80	U	9.5	0.80	ug/L	07/13/12 15:51	07/18/12 14:11		1
3-Nitroaniline	<4.7	U	47	4.7	ug/L	07/13/12 15:51	07/18/12 14:11		1
Acenaphthene	<0.72	U	9.5	0.72	ug/L	07/13/12 15:51	07/18/12 14:11		1
2,4-Dinitrophenol	<9.5	U	47	9.5	ug/L	07/13/12 15:51	07/18/12 14:11		1
4-Nitrophenol	<1.8	U	47	1.8	ug/L	07/13/12 15:51	07/18/12 14:11		1
Dibenzofuran	<0.75	U	9.5	0.75	ug/L	07/13/12 15:51	07/18/12 14:11		1
2,4-Dinitrotoluene	<1.1	U	9.5	1.1	ug/L	07/13/12 15:51	07/18/12 14:11		1
2,6-Dinitrotoluene	<1.0	U	9.5	1.0	ug/L	07/13/12 15:51	07/18/12 14:11		1
3 & 4 Methylphenol	<1.2	U	9.5	1.2	ug/L	07/13/12 15:51	07/18/12 14:11		1
Diethyl phthalate	<0.83	U	9.5	0.83	ug/L	07/13/12 15:51	07/18/12 14:11		1
4-Chlorophenyl phenyl ether	<0.79	U	9.5	0.79	ug/L	07/13/12 15:51	07/18/12 14:11		1
Fluorene	<0.91	U	9.5	0.91	ug/L	07/13/12 15:51	07/18/12 14:11		1
4-Nitroaniline	<4.7	U	47	4.7	ug/L	07/13/12 15:51	07/18/12 14:11		1
4,6-Dinitro-2-methylphenol	<9.5	U	47	9.5	ug/L	07/13/12 15:51	07/18/12 14:11		1
N-Nitrosodiphenylamine	<0.87	U	9.5	0.87	ug/L	07/13/12 15:51	07/18/12 14:11		1
4-Bromophenyl phenyl ether	<0.73	U	9.5	0.73	ug/L	07/13/12 15:51	07/18/12 14:11		1
Hexachlorobenzene	<0.75	U	9.5	0.75	ug/L	07/13/12 15:51	07/18/12 14:11		1
Pentachlorophenol	<1.9	U	47	1.9	ug/L	07/13/12 15:51	07/18/12 14:11		1
Phenanthrene	<0.73	U	9.5	0.73	ug/L	07/13/12 15:51	07/18/12 14:11		1
Anthracene	<0.65	U	9.5	0.65	ug/L	07/13/12 15:51	07/18/12 14:11		1
Di-n-butyl phthalate	<0.79	U	9.5	0.79	ug/L	07/13/12 15:51	07/18/12 14:11		1
Fluoranthene	<0.70	U	9.5	0.70	ug/L	07/13/12 15:51	07/18/12 14:11		1
Pyrene	<0.60	U	9.5	0.60	ug/L	07/13/12 15:51	07/18/12 14:11		1
Butyl benzyl phthalate	<1.1	U	9.5	1.1	ug/L	07/13/12 15:51	07/18/12 14:11		1
3,3'-Dichlorobenzidine	<28	U	57	28	ug/L	07/13/12 15:51	07/18/12 14:11		1
Benzo[a]anthracene	<0.52	U	9.5	0.52	ug/L	07/13/12 15:51	07/18/12 14:11		1

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Client Sample ID: RW-4

Date Collected: 07/11/12 07:00
Date Received: 07/12/12 09:36

Lab Sample ID: 680-81065-3

Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	<1.5	U	9.5	1.5	ug/L		07/13/12 15:51	07/18/12 14:11	1
Chrysene	<0.48	U	9.5	0.48	ug/L		07/13/12 15:51	07/18/12 14:11	1
1,4-Dioxane	<3.2	U	9.5	3.2	ug/L		07/13/12 15:51	07/18/12 14:11	1
Di-n-octyl phthalate	<1.3	U	9.5	1.3	ug/L		07/13/12 15:51	07/18/12 14:11	1
Benzo[b]fluoranthene	<2.5	U	9.5	2.5	ug/L		07/13/12 15:51	07/18/12 14:11	1
Benzo[k]fluoranthene	<1.1	U	9.5	1.1	ug/L		07/13/12 15:51	07/18/12 14:11	1
Benzo[a]pyrene	<0.67	U	9.5	0.67	ug/L		07/13/12 15:51	07/18/12 14:11	1
Indeno[1,2,3-cd]pyrene	<0.95	U	9.5	0.95	ug/L		07/13/12 15:51	07/18/12 14:11	1
Dibenz(a,h)anthracene	<0.95	U	9.5	0.95	ug/L		07/13/12 15:51	07/18/12 14:11	1
Benzo[g,h,i]perylene	<0.82	U	9.5	0.82	ug/L		07/13/12 15:51	07/18/12 14:11	1
Carbazole	<0.67	U	9.5	0.67	ug/L		07/13/12 15:51	07/18/12 14:11	1
<hr/>									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Phenol-d5	71		25 - 130				07/13/12 15:51	07/18/12 14:11	1
2-Fluorophenol	70		25 - 130				07/13/12 15:51	07/18/12 14:11	1
2,4,6-Tribromophenol	81		31 - 141				07/13/12 15:51	07/18/12 14:11	1
Nitrobenzene-d5	69		39 - 130				07/13/12 15:51	07/18/12 14:11	1
2-Fluorobiphenyl	75		38 - 130				07/13/12 15:51	07/18/12 14:11	1
Terphenyl-d14	38		10 - 143				07/13/12 15:51	07/18/12 14:11	1

Client Sample ID: RW-6

Date Collected: 07/11/12 07:20
Date Received: 07/12/12 09:36

Lab Sample ID: 680-81065-4

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	<0.33	U	1.0	0.33	ug/L		07/13/12 15:03	07/13/12 15:03	1
Bromomethane	<0.80	U	1.0	0.80	ug/L		07/13/12 15:03	07/13/12 15:03	1
Vinyl chloride	3.1		1.0	0.18	ug/L		07/13/12 15:03	07/13/12 15:03	1
Chloroethane	<1.0	U	1.0	1.0	ug/L		07/13/12 15:03	07/13/12 15:03	1
Methylene Chloride	<1.0	U	5.0	1.0	ug/L		07/13/12 15:03	07/13/12 15:03	1
Acetone	<5.0	U	25	5.0	ug/L		07/13/12 15:03	07/13/12 15:03	1
Carbon disulfide	<0.60	U	2.0	0.60	ug/L		07/13/12 15:03	07/13/12 15:03	1
1,1-Dichloroethene	<0.11	U	1.0	0.11	ug/L		07/13/12 15:03	07/13/12 15:03	1
1,1-Dichloroethane	<0.25	U	1.0	0.25	ug/L		07/13/12 15:03	07/13/12 15:03	1
cis-1,2-Dichloroethene	0.35	I	1.0	0.15	ug/L		07/13/12 15:03	07/13/12 15:03	1
trans-1,2-Dichloroethene	<0.20	U	1.0	0.20	ug/L		07/13/12 15:03	07/13/12 15:03	1
Chloroform	<0.14	U	1.0	0.14	ug/L		07/13/12 15:03	07/13/12 15:03	1
1,2-Dichloroethane	<0.10	U	1.0	0.10	ug/L		07/13/12 15:03	07/13/12 15:03	1
2-Butanone (MEK)	<1.0	U	10	1.0	ug/L		07/13/12 15:03	07/13/12 15:03	1
1,1,1-Trichloroethane	<0.50	U	1.0	0.50	ug/L		07/13/12 15:03	07/13/12 15:03	1
Carbon tetrachloride	<0.50	U	1.0	0.50	ug/L		07/13/12 15:03	07/13/12 15:03	1
Dichlorobromomethane	<0.25	U	1.0	0.25	ug/L		07/13/12 15:03	07/13/12 15:03	1
1,1,2,2-Tetrachloroethane	<0.18	U	1.0	0.18	ug/L		07/13/12 15:03	07/13/12 15:03	1
1,2-Dichloropropane	<0.13	U	1.0	0.13	ug/L		07/13/12 15:03	07/13/12 15:03	1
trans-1,3-Dichloropropene	<0.21	U	1.0	0.21	ug/L		07/13/12 15:03	07/13/12 15:03	1
Trichloroethene	<0.13	U	1.0	0.13	ug/L		07/13/12 15:03	07/13/12 15:03	1
Chlorodibromomethane	<0.10	U	1.0	0.10	ug/L		07/13/12 15:03	07/13/12 15:03	1
1,1,2-Trichloroethane	<0.13	U	1.0	0.13	ug/L		07/13/12 15:03	07/13/12 15:03	1
Benzene	<0.25	U	1.0	0.25	ug/L		07/13/12 15:03	07/13/12 15:03	1
cis-1,3-Dichloropropene	<0.11	U	1.0	0.11	ug/L		07/13/12 15:03	07/13/12 15:03	1

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Client Sample ID: RW-6

Lab Sample ID: 680-81065-4

Date Collected: 07/11/12 07:20

Matrix: Water

Date Received: 07/12/12 09:36

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	<0.50	U	1.0	0.50	ug/L			07/13/12 15:03	1
2-Hexanone	<1.0	U	10	1.0	ug/L			07/13/12 15:03	1
4-Methyl-2-pentanone (MIBK)	<1.0	U	10	1.0	ug/L			07/13/12 15:03	1
Tetrachloroethene	<0.15	U	1.0	0.15	ug/L			07/13/12 15:03	1
Toluene	<0.33	U	1.0	0.33	ug/L			07/13/12 15:03	1
Chlorobenzene	<0.25	U	1.0	0.25	ug/L			07/13/12 15:03	1
Ethylbenzene	<0.11	U	1.0	0.11	ug/L			07/13/12 15:03	1
Styrene	<0.11	U	1.0	0.11	ug/L			07/13/12 15:03	1
Xylenes, Total	<0.20	U	2.0	0.20	ug/L			07/13/12 15:03	1
Surrogate		%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100			70 - 130				07/13/12 15:03	1
4-Bromofluorobenzene	94			70 - 130				07/13/12 15:03	1
Dibromofluoromethane	102			70 - 130				07/13/12 15:03	1

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	<1.0	U	2.0	1.0	ug/L			07/16/12 15:24	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	<0.78	U	9.5	0.78	ug/L			07/13/12 15:51	07/18/12 14:40
Bis(2-chloroethyl)ether	<1.0	U	9.5	1.0	ug/L			07/13/12 15:51	07/18/12 14:40
bis(chloroisopropyl) ether	<0.74	U	9.5	0.74	ug/L			07/13/12 15:51	07/18/12 14:40
2-Chlorophenol	<0.82	U	9.5	0.82	ug/L			07/13/12 15:51	07/18/12 14:40
1,3-Dichlorobenzene	<0.56	U	9.5	0.56	ug/L			07/13/12 15:51	07/18/12 14:40
1,4-Dichlorobenzene	<0.51	U	9.5	0.51	ug/L			07/13/12 15:51	07/18/12 14:40
1,2-Dichlorobenzene	<0.50	U	9.5	0.50	ug/L			07/13/12 15:51	07/18/12 14:40
2-Methylphenol	<0.84	U	9.5	0.84	ug/L			07/13/12 15:51	07/18/12 14:40
N-Nitrosodi-n-propylamine	<0.68	U	9.5	0.68	ug/L			07/13/12 15:51	07/18/12 14:40
Benzoic acid	<4.7	U	47	4.7	ug/L			07/13/12 15:51	07/18/12 14:40
Hexachloroethane	<0.72	U	9.5	0.72	ug/L			07/13/12 15:51	07/18/12 14:40
Nitrobenzene	<0.69	U	9.5	0.69	ug/L			07/13/12 15:51	07/18/12 14:40
Isophorone	<0.85	U	9.5	0.85	ug/L			07/13/12 15:51	07/18/12 14:40
2-Nitrophenol	<0.72	U	9.5	0.72	ug/L			07/13/12 15:51	07/18/12 14:40
2,4-Dimethylphenol	<3.8	U	9.5	3.8	ug/L			07/13/12 15:51	07/18/12 14:40
Bis(2-chloroethoxy)methane	<0.89	U	9.5	0.89	ug/L			07/13/12 15:51	07/18/12 14:40
2,4-Dichlorophenol	<1.0	U	9.5	1.0	ug/L			07/13/12 15:51	07/18/12 14:40
Benzyl alcohol	<1.0	U	9.5	1.0	ug/L			07/13/12 15:51	07/18/12 14:40
1,2,4-Trichlorobenzene	<0.53	U	9.5	0.53	ug/L			07/13/12 15:51	07/18/12 14:40
Naphthalene	<0.66	U	9.5	0.66	ug/L			07/13/12 15:51	07/18/12 14:40
4-Chloroaniline	<2.1	U	19	2.1	ug/L			07/13/12 15:51	07/18/12 14:40
Hexachlorobutadiene	<0.59	U	9.5	0.59	ug/L			07/13/12 15:51	07/18/12 14:40
4-Chloro-3-methylphenol	<0.95	U	9.5	0.95	ug/L			07/13/12 15:51	07/18/12 14:40
2-Methylnaphthalene	<0.74	U	9.5	0.74	ug/L			07/13/12 15:51	07/18/12 14:40
Hexachlorocyclopentadiene	<2.4	U	9.5	2.4	ug/L			07/13/12 15:51	07/18/12 14:40
2,4,6-Trichlorophenol	<0.80	U	9.5	0.80	ug/L			07/13/12 15:51	07/18/12 14:40
2,4,5-Trichlorophenol	<1.1	U	9.5	1.1	ug/L			07/13/12 15:51	07/18/12 14:40
2-Chloronaphthalene	<0.76	U	9.5	0.76	ug/L			07/13/12 15:51	07/18/12 14:40
2-Nitroaniline	<1.2	U	47	1.2	ug/L			07/13/12 15:51	07/18/12 14:40
Dimethyl phthalate	<0.94	U	9.5	0.94	ug/L			07/13/12 15:51	07/18/12 14:40
Acenaphthylene	<0.80	U	9.5	0.80	ug/L			07/13/12 15:51	07/18/12 14:40

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Client Sample ID: RW-6

Lab Sample ID: 680-81065-4

Date Collected: 07/11/12 07:20

Matrix: Water

Date Received: 07/12/12 09:36

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3-Nitroaniline	<4.7	U	47	4.7	ug/L	07/13/12 15:51	07/18/12 14:40		1
Acenaphthene	<0.72	U	9.5	0.72	ug/L	07/13/12 15:51	07/18/12 14:40		1
2,4-Dinitrophenol	<9.5	U	47	9.5	ug/L	07/13/12 15:51	07/18/12 14:40		1
4-Nitrophenol	<1.8	U	47	1.8	ug/L	07/13/12 15:51	07/18/12 14:40		1
Dibenzofuran	<0.75	U	9.5	0.75	ug/L	07/13/12 15:51	07/18/12 14:40		1
2,4-Dinitrotoluene	<1.1	U	9.5	1.1	ug/L	07/13/12 15:51	07/18/12 14:40		1
2,6-Dinitrotoluene	<1.0	U	9.5	1.0	ug/L	07/13/12 15:51	07/18/12 14:40		1
3 & 4 Methylphenol	<1.2	U	9.5	1.2	ug/L	07/13/12 15:51	07/18/12 14:40		1
Diethyl phthalate	<0.83	U	9.5	0.83	ug/L	07/13/12 15:51	07/18/12 14:40		1
4-Chlorophenyl phenyl ether	<0.79	U	9.5	0.79	ug/L	07/13/12 15:51	07/18/12 14:40		1
Fluorene	<0.91	U	9.5	0.91	ug/L	07/13/12 15:51	07/18/12 14:40		1
4-Nitroaniline	<4.7	U	47	4.7	ug/L	07/13/12 15:51	07/18/12 14:40		1
4,6-Dinitro-2-methylphenol	<9.5	U	47	9.5	ug/L	07/13/12 15:51	07/18/12 14:40		1
N-Nitrosodiphenylamine	<0.87	U	9.5	0.87	ug/L	07/13/12 15:51	07/18/12 14:40		1
4-Bromophenyl phenyl ether	<0.73	U	9.5	0.73	ug/L	07/13/12 15:51	07/18/12 14:40		1
Hexachlorobenzene	<0.75	U	9.5	0.75	ug/L	07/13/12 15:51	07/18/12 14:40		1
Pentachlorophenol	<1.9	U	47	1.9	ug/L	07/13/12 15:51	07/18/12 14:40		1
Phanthrene	<0.73	U	9.5	0.73	ug/L	07/13/12 15:51	07/18/12 14:40		1
Anthracene	<0.65	U	9.5	0.65	ug/L	07/13/12 15:51	07/18/12 14:40		1
Di-n-butyl phthalate	<0.78	U	9.5	0.78	ug/L	07/13/12 15:51	07/18/12 14:40		1
Fluoranthene	<0.70	U	9.5	0.70	ug/L	07/13/12 15:51	07/18/12 14:40		1
Pyrene	<0.60	U	9.5	0.60	ug/L	07/13/12 15:51	07/18/12 14:40		1
Butyl benzyl phthalate	1.6	I	9.5	1.1	ug/L	07/13/12 15:51	07/18/12 14:40		1
3,3'-Dichlorobenzidine	<28	U	57	28	ug/L	07/13/12 15:51	07/18/12 14:40		1
Benzo[a]anthracene	<0.52	U	9.5	0.52	ug/L	07/13/12 15:51	07/18/12 14:40		1
Bis(2-ethylhexyl) phthalate	<1.5	U	9.5	1.5	ug/L	07/13/12 15:51	07/18/12 14:40		1
Chrysene	<0.48	U	9.5	0.48	ug/L	07/13/12 15:51	07/18/12 14:40		1
1,4-Dioxane	<3.2	U	9.5	3.2	ug/L	07/13/12 15:51	07/18/12 14:40		1
Di-n-octyl phthalate	<1.3	U	9.5	1.3	ug/L	07/13/12 15:51	07/18/12 14:40		1
Benzo[b]fluoranthene	<2.5	U	9.5	2.5	ug/L	07/13/12 15:51	07/18/12 14:40		1
Benzo[k]fluoranthene	<1.1	U	9.5	1.1	ug/L	07/13/12 15:51	07/18/12 14:40		1
Benzo[a]pyrene	<0.67	U	9.5	0.67	ug/L	07/13/12 15:51	07/18/12 14:40		1
Indeno[1,2,3-cd]pyrene	<0.95	U	9.5	0.95	ug/L	07/13/12 15:51	07/18/12 14:40		1
Dibenz(a,h)anthracene	<0.95	U	9.5	0.95	ug/L	07/13/12 15:51	07/18/12 14:40		1
Benzof[g,h,i]perylene	<0.82	U	9.5	0.82	ug/L	07/13/12 15:51	07/18/12 14:40		1
Carbazole	<0.67	U	9.5	0.67	ug/L	07/13/12 15:51	07/18/12 14:40		1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Phenol-d5	69		25 - 130			07/13/12 15:51	07/18/12 14:40		1
2-Fluorophenol	72		25 - 130			07/13/12 15:51	07/18/12 14:40		1
2,4,6-Tribromophenol	83		31 - 141			07/13/12 15:51	07/18/12 14:40		1
Nitrobenzene-d5	69		39 - 130			07/13/12 15:51	07/18/12 14:40		1
2-Fluorobiphenyl	73		38 - 130			07/13/12 15:51	07/18/12 14:40		1
Terphenyl-d14	23		10 - 143			07/13/12 15:51	07/18/12 14:40		1

Surrogate Summary

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		TOL (70-130)	BFB (70-130)	DBFM (70-130)
680-81065-3	RW-4	102	98	101
680-81065-4	RW-6	100	94	102
LCS 680-243207/3	Lab Control Sample	106	100	98
LCSD 680-243207/4	Lab Control Sample Dup	105	97	99
MB 680-243207/5	Method Blank	101	97	102

Surrogate Legend

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene

DBFM = Dibromofluoromethane

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		PHL (25-130)	2FP (25-130)	TBP (31-141)	NBZ (39-130)	FBP (38-130)	TPH (10-143)
680-81065-3	RW-4	71	70	81	69	75	38
680-81065-4	RW-6	69	72	83	69	73	23
LCS 680-243148/21-A	Lab Control Sample	72	75	88	68	72	75
LCSD 680-243148/22-A	Lab Control Sample Dup	74	79	85	69	71	73
MB 680-243148/20-A	Method Blank	74	75	79	73	76	75

Surrogate Legend

PHL = Phenol-d5

2FP = 2-Fluorophenol

TBP = 2,4,6-Tribromophenol

NBZ = Nitrobenzene-d5

FBP = 2-Fluorobiphenyl

TPH = Terphenyl-d14

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-243207/5

Matrix: Water

Analysis Batch: 243207

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloromethane	<0.33	U	1.0	0.33	ug/L			07/13/12 11:33	1
Bromomethane	<0.80	U	1.0	0.80	ug/L			07/13/12 11:33	1
Vinyl chloride	<0.18	U	1.0	0.18	ug/L			07/13/12 11:33	1
Chloroethane	<1.0	U	1.0	1.0	ug/L			07/13/12 11:33	1
Methylene Chloride	<1.0	U	5.0	1.0	ug/L			07/13/12 11:33	1
Acetone	<5.0	U	25	5.0	ug/L			07/13/12 11:33	1
Carbon disulfide	<0.60	U	2.0	0.60	ug/L			07/13/12 11:33	1
1,1-Dichloroethene	<0.11	U	1.0	0.11	ug/L			07/13/12 11:33	1
1,1-Dichloroethane	<0.25	U	1.0	0.25	ug/L			07/13/12 11:33	1
cis-1,2-Dichloroethene	<0.15	U	1.0	0.15	ug/L			07/13/12 11:33	1
trans-1,2-Dichloroethene	<0.20	U	1.0	0.20	ug/L			07/13/12 11:33	1
Chloroform	<0.14	U	1.0	0.14	ug/L			07/13/12 11:33	1
1,2-Dichloroethane	<0.10	U	1.0	0.10	ug/L			07/13/12 11:33	1
2-Butanone (MEK)	<1.0	U	10	1.0	ug/L			07/13/12 11:33	1
1,1,1-Trichloroethane	<0.50	U	1.0	0.50	ug/L			07/13/12 11:33	1
Carbon tetrachloride	<0.50	U	1.0	0.50	ug/L			07/13/12 11:33	1
Dichlorobromomethane	<0.25	U	1.0	0.25	ug/L			07/13/12 11:33	1
1,1,2,2-Tetrachloroethane	<0.18	U	1.0	0.18	ug/L			07/13/12 11:33	1
1,2-Dichloropropane	<0.13	U	1.0	0.13	ug/L			07/13/12 11:33	1
trans-1,3-Dichloropropene	<0.21	U	1.0	0.21	ug/L			07/13/12 11:33	1
Trichloroethene	<0.13	U	1.0	0.13	ug/L			07/13/12 11:33	1
Chlorodibromomethane	<0.10	U	1.0	0.10	ug/L			07/13/12 11:33	1
1,1,2-Trichloroethane	<0.13	U	1.0	0.13	ug/L			07/13/12 11:33	1
Benzene	<0.25	U	1.0	0.25	ug/L			07/13/12 11:33	1
cis-1,3-Dichloropropene	<0.11	U	1.0	0.11	ug/L			07/13/12 11:33	1
Bromoform	<0.50	U	1.0	0.50	ug/L			07/13/12 11:33	1
2-Hexanone	<1.0	U	10	1.0	ug/L			07/13/12 11:33	1
4-Methyl-2-pentanone (MIBK)	<1.0	U	10	1.0	ug/L			07/13/12 11:33	1
Tetrachloroethene	<0.15	U	1.0	0.15	ug/L			07/13/12 11:33	1
Toluene	<0.33	U	1.0	0.33	ug/L			07/13/12 11:33	1
Chlorobenzene	<0.25	U	1.0	0.25	ug/L			07/13/12 11:33	1
Ethylbenzene	<0.11	U	1.0	0.11	ug/L			07/13/12 11:33	1
Styrene	<0.11	U	1.0	0.11	ug/L			07/13/12 11:33	1
Xylenes, Total	<0.20	U	2.0	0.20	ug/L			07/13/12 11:33	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130		07/13/12 11:33	1
4-Bromofluorobenzene	97		70 - 130		07/13/12 11:33	1
Dibromofluoromethane	102		70 - 130		07/13/12 11:33	1

Lab Sample ID: LCS 680-243207/3

Matrix: Water

Analysis Batch: 243207

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS		Unit	D	%Rec	Limits
	Added	Result	Qualifier				
Chloromethane	50.0	45.0		ug/L	90	70 - 130	
Bromomethane	50.0	70.1		ug/L	140	23 - 165	
Vinyl chloride	50.0	39.2		ug/L	78	67 - 134	
Chloroethane	50.0	52.1		ug/L	104	56 - 152	

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-243207/3

Matrix: Water

Analysis Batch: 243207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec.
		Result	Qualifier				
Methylene Chloride	50.0	46.4		ug/L		93	67 - 130
Acetone	100	88.9		ug/L		89	26 - 180
Carbon disulfide	50.0	45.3		ug/L		91	54 - 132
1,1-Dichloroethene	50.0	43.6		ug/L		87	66 - 131
1,1-Dichloroethane	50.0	47.1		ug/L		94	70 - 130
cis-1,2-Dichloroethene	50.0	45.6		ug/L		91	70 - 130
trans-1,2-Dichloroethene	50.0	45.1		ug/L		90	70 - 130
Chloroform	50.0	48.7		ug/L		97	70 - 130
1,2-Dichloroethane	50.0	51.2		ug/L		102	70 - 130
2-Butanone (MEK)	100	100		ug/L		100	49 - 172
1,1,1-Trichloroethane	50.0	52.9		ug/L		106	70 - 130
Carbon tetrachloride	50.0	54.7		ug/L		109	70 - 130
Dichlorobromomethane	50.0	51.5		ug/L		103	70 - 130
1,1,2,2-Tetrachloroethane	50.0	49.7		ug/L		99	70 - 130
1,2-Dichloropropane	50.0	49.8		ug/L		100	70 - 130
trans-1,3-Dichloropropene	50.0	51.3		ug/L		103	70 - 130
Trichloroethene	50.0	50.6		ug/L		101	70 - 130
Chlorodibromomethane	50.0	51.3		ug/L		103	70 - 130
1,1,2-Trichloroethane	50.0	53.8		ug/L		108	70 - 130
Benzene	50.0	46.2		ug/L		92	70 - 130
cis-1,3-Dichloropropene	50.0	49.7		ug/L		99	70 - 130
Bromoform	50.0	52.8		ug/L		106	70 - 130
2-Hexanone	100	85.4		ug/L		85	42 - 185
4-Methyl-2-pentanone (MIBK)	100	106		ug/L		106	70 - 130
Tetrachloroethene	50.0	49.3		ug/L		99	70 - 130
Toluene	50.0	50.8		ug/L		102	70 - 130
Chlorobenzene	50.0	47.9		ug/L		96	70 - 130
Ethylbenzene	50.0	49.2		ug/L		98	70 - 130
Styrene	50.0	50.7		ug/L		101	70 - 130
Xylenes, Total	150	147		ug/L		98	70 - 130

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	106		70 - 130
4-Bromofluorobenzene	100		70 - 130
Dibromofluoromethane	98		70 - 130

Lab Sample ID: LCSD 680-243207/4

Matrix: Water

Analysis Batch: 243207

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD		Unit	D	%Rec	%Rec.	RPD	RPD
		Result	Qualifier						
Chloromethane	50.0	43.8		ug/L		88	70 - 130	3	30
Bromomethane	50.0	69.2		ug/L		138	23 - 165	1	50
Vinyl chloride	50.0	38.8		ug/L		78	67 - 134	1	30
Chloroethane	50.0	46.0		ug/L		92	56 - 152	12	40
Methylene Chloride	50.0	45.3		ug/L		91	67 - 130	2	30
Acetone	100	88.0		ug/L		88	26 - 180	1	50
Carbon disulfide	50.0	43.8		ug/L		88	54 - 132	3	30
1,1-Dichloroethene	50.0	42.9		ug/L		86	66 - 131	2	30

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-243207/4

Matrix: Water

Analysis Batch: 243207

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec.	Limits	RPD	RPD	Limit
1,1-Dichloroethane	50.0	46.9		ug/L		94	70 - 130	1		30
cis-1,2-Dichloroethene	50.0	44.3		ug/L		89	70 - 130	3		30
trans-1,2-Dichloroethene	50.0	44.9		ug/L		90	70 - 130	0		30
Chloroform	50.0	48.3		ug/L		97	70 - 130	1		30
1,2-Dichloroethane	50.0	50.6		ug/L		101	70 - 130	1		30
2-Butanone (MEK)	100	99.0		ug/L		99	49 - 172	1		30
1,1,1-Trichloroethane	50.0	51.4		ug/L		103	70 - 130	3		30
Carbon tetrachloride	50.0	53.7		ug/L		107	70 - 130	2		30
Dichlorobromomethane	50.0	50.6		ug/L		101	70 - 130	2		30
1,1,2,2-Tetrachloroethane	50.0	49.2		ug/L		98	70 - 130	1		30
1,2-Dichloropropane	50.0	49.5		ug/L		99	70 - 130	1		30
trans-1,3-Dichloropropene	50.0	50.8		ug/L		102	70 - 130	1		50
Trichloroethene	50.0	48.8		ug/L		98	70 - 130	4		30
Chlorodibromomethane	50.0	50.2		ug/L		100	70 - 130	2		50
1,1,2-Trichloroethane	50.0	53.1		ug/L		106	70 - 130	1		30
Benzene	50.0	45.6		ug/L		91	70 - 130	1		30
cis-1,3-Dichloropropene	50.0	49.8		ug/L		100	70 - 130	0		30
Bromoform	50.0	50.9		ug/L		102	70 - 130	4		30
2-Hexanone	100	85.0		ug/L		85	42 - 185	0		30
4-Methyl-2-pentanone (MIBK)	100	105		ug/L		105	70 - 130	2		30
Tetrachloroethene	50.0	46.7		ug/L		93	70 - 130	5		30
Toluene	50.0	50.7		ug/L		101	70 - 130	0		30
Chlorobenzene	50.0	46.7		ug/L		93	70 - 130	3		30
Ethylbenzene	50.0	47.6		ug/L		95	70 - 130	3		30
Styrene	50.0	49.1		ug/L		98	70 - 130	3		30
Xylenes, Total	150	142		ug/L		95	70 - 130	3		30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	105		70 - 130
4-Bromofluorobenzene	97		70 - 130
Dibromofluoromethane	99		70 - 130

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 660-126688/6

Matrix: Water

Analysis Batch: 126688

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	<1.0	U	2.0	1.0	ug/L			07/16/12 10:09	1

Lab Sample ID: LCS 660-126688/3

Matrix: Water

Analysis Batch: 126688

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCs Result	LCs Qualifier	Unit	D	%Rec.	Limits
1,4-Dioxane	25.0	24.1		ug/L		96	50 - 150

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Method: 8260C SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 660-126688/4

Matrix: Water

Analysis Batch: 126688

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec.	RPD	RPD Limit
1,4-Dioxane	25.0	30.6		ug/L	122	50 - 150	24	50

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-243148/20-A

Matrix: Water

Analysis Batch: 243742

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 243148

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	<0.83	U	10	0.83	ug/L		07/13/12 15:51	07/18/12 12:43	1
Bis(2-chloroethyl)ether	<1.1	U	10	1.1	ug/L		07/13/12 15:51	07/18/12 12:43	1
bis(chloroisopropyl) ether	<0.78	U	10	0.78	ug/L		07/13/12 15:51	07/18/12 12:43	1
2-Chlorophenol	<0.87	U	10	0.87	ug/L		07/13/12 15:51	07/18/12 12:43	1
1,3-Dichlorobenzene	<0.59	U	10	0.59	ug/L		07/13/12 15:51	07/18/12 12:43	1
1,4-Dichlorobenzene	<0.54	U	10	0.54	ug/L		07/13/12 15:51	07/18/12 12:43	1
1,2-Dichlorobenzene	<0.53	U	10	0.53	ug/L		07/13/12 15:51	07/18/12 12:43	1
2-Methylphenol	<0.89	U	10	0.89	ug/L		07/13/12 15:51	07/18/12 12:43	1
N-Nitrosodi-n-propylamine	<0.72	U	10	0.72	ug/L		07/13/12 15:51	07/18/12 12:43	1
Benzoic acid	<5.0	U	50	5.0	ug/L		07/13/12 15:51	07/18/12 12:43	1
Hexachloroethane	<0.76	U	10	0.76	ug/L		07/13/12 15:51	07/18/12 12:43	1
Nitrobenzene	<0.73	U	10	0.73	ug/L		07/13/12 15:51	07/18/12 12:43	1
Isophorone	<0.90	U	10	0.90	ug/L		07/13/12 15:51	07/18/12 12:43	1
2-Nitrophenol	<0.76	U	10	0.76	ug/L		07/13/12 15:51	07/18/12 12:43	1
2,4-Dimethylphenol	<4.0	U	10	4.0	ug/L		07/13/12 15:51	07/18/12 12:43	1
Bis(2-chloroethoxy)methane	<0.94	U	10	0.94	ug/L		07/13/12 15:51	07/18/12 12:43	1
2,4-Dichlorophenol	<1.1	U	10	1.1	ug/L		07/13/12 15:51	07/18/12 12:43	1
Benzyl alcohol	<1.1	U	10	1.1	ug/L		07/13/12 15:51	07/18/12 12:43	1
1,2,4-Trichlorobenzene	<0.56	U	10	0.56	ug/L		07/13/12 15:51	07/18/12 12:43	1
Naphthalene	<0.70	U	10	0.70	ug/L		07/13/12 15:51	07/18/12 12:43	1
4-Chloroaniline	<2.2	U	20	2.2	ug/L		07/13/12 15:51	07/18/12 12:43	1
Hexachlorobutadiene	<0.62	U	10	0.62	ug/L		07/13/12 15:51	07/18/12 12:43	1
4-Chloro-3-methylphenol	<1.0	U	10	1.0	ug/L		07/13/12 15:51	07/18/12 12:43	1
2-Methylnaphthalene	<0.78	U	10	0.78	ug/L		07/13/12 15:51	07/18/12 12:43	1
Hexachlorocyclopentadiene	<2.5	U	10	2.5	ug/L		07/13/12 15:51	07/18/12 12:43	1
2,4,6-Trichlorophenol	<0.85	U	10	0.85	ug/L		07/13/12 15:51	07/18/12 12:43	1
2,4,5-Trichlorophenol	<1.2	U	10	1.2	ug/L		07/13/12 15:51	07/18/12 12:43	1
2-Chloronaphthalene	<0.80	U	10	0.80	ug/L		07/13/12 15:51	07/18/12 12:43	1
2-Nitroaniline	<1.3	U	50	1.3	ug/L		07/13/12 15:51	07/18/12 12:43	1
Dimethyl phthalate	<0.99	U	10	0.99	ug/L		07/13/12 15:51	07/18/12 12:43	1
Acenaphthylene	<0.85	U	10	0.85	ug/L		07/13/12 15:51	07/18/12 12:43	1
3-Nitroaniline	<5.0	U	50	5.0	ug/L		07/13/12 15:51	07/18/12 12:43	1
Acenaphthene	<0.76	U	10	0.76	ug/L		07/13/12 15:51	07/18/12 12:43	1
2,4-Dinitrophenol	<10	U	50	10	ug/L		07/13/12 15:51	07/18/12 12:43	1
4-Nitrophenol	<1.9	U	50	1.9	ug/L		07/13/12 15:51	07/18/12 12:43	1
Dibenzofuran	<0.79	U	10	0.79	ug/L		07/13/12 15:51	07/18/12 12:43	1
2,4-Dinitrotoluene	<1.2	U	10	1.2	ug/L		07/13/12 15:51	07/18/12 12:43	1
2,6-Dinitrotoluene	<1.1	U	10	1.1	ug/L		07/13/12 15:51	07/18/12 12:43	1
3 & 4 Methylphenol	<1.3	U	10	1.3	ug/L		07/13/12 15:51	07/18/12 12:43	1
Diethyl phthalate	<0.88	U	10	0.88	ug/L		07/13/12 15:51	07/18/12 12:43	1

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-243148/20-A

Matrix: Water

Analysis Batch: 243742

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 243148

MB MB

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorophenyl phenyl ether	<0.84	U	10	0.84	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Fluorene	<0.96	U	10	0.96	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
4-Nitroaniline	<5.0	U	50	5.0	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
4,6-Dinitro-2-methylphenol	<10	U	50	10	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
N-Nitrosodiphenylamine	<0.92	U	10	0.92	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
4-Bromophenyl phenyl ether	<0.77	U	10	0.77	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Hexachlorobenzene	<0.79	U	10	0.79	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Pentachlorophenol	<2.0	U	50	2.0	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Phenanthrene	<0.77	U	10	0.77	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Anthracene	<0.69	U	10	0.69	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Di-n-butyl phthalate	<0.83	U	10	0.83	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Fluoranthene	<0.74	U	10	0.74	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Pyrene	<0.63	U	10	0.63	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Butyl benzyl phthalate	<1.2	U	10	1.2	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
3,3'-Dichlorobenzidine	<30	U	60	30	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Benzo[a]anthracene	<0.55	U	10	0.55	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Bis(2-ethylhexyl) phthalate	<1.6	U	10	1.6	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Chrysene	<0.51	U	10	0.51	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
1,4-Dioxane	<3.4	U	10	3.4	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Di-n-octyl phthalate	<1.4	U	10	1.4	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Benzo[b]fluoranthene	<2.6	U	10	2.6	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Benzo[k]fluoranthene	<1.2	U	10	1.2	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Benzo[a]pyrene	<0.71	U	10	0.71	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Indeno[1,2,3-cd]pyrene	<1.0	U	10	1.0	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Dibenz(a,h)anthracene	<1.0	U	10	1.0	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Benzo[g,h,i]perylene	<0.87	U	10	0.87	ug/L	07/13/12 15:51	07/18/12 12:43	1	1
Carbazole	<0.71	U	10	0.71	ug/L	07/13/12 15:51	07/18/12 12:43	1	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Phenol-d5	74		25 - 130	07/13/12 15:51	07/18/12 12:43	1
2-Fluorophenol	75		25 - 130	07/13/12 15:51	07/18/12 12:43	1
2,4,6-Tribromophenol	79		31 - 141	07/13/12 15:51	07/18/12 12:43	1
Nitrobenzene-d5	73		39 - 130	07/13/12 15:51	07/18/12 12:43	1
2-Fluorobiphenyl	76		38 - 130	07/13/12 15:51	07/18/12 12:43	1
Terphenyl-d14	75		10 - 143	07/13/12 15:51	07/18/12 12:43	1

Lab Sample ID: LCS 680-243148/21-A

Matrix: Water

Analysis Batch: 243742

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 243148

Analyte	Spike Added	LCS			D	%Rec	Limits
		Result	Qualifier	Unit			
Phenol	100	69.2		ug/L	69	29 - 130	
Bis(2-chloroethyl)ether	100	75.1		ug/L	75	56 - 130	
bis(chloroisopropyl) ether	100	79.8		ug/L	80	55 - 130	
2-Chlorophenol	100	78.8		ug/L	79	57 - 130	
1,3-Dichlorobenzene	100	69.1		ug/L	69	41 - 130	
1,4-Dichlorobenzene	100	68.5		ug/L	69	43 - 130	
1,2-Dichlorobenzene	100	69.8		ug/L	70	43 - 130	
2-Methylphenol	100	78.4		ug/L	78	55 - 130	

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-243148/21-A

Matrix: Water

Analysis Batch: 243742

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 243148

Analyte	Spike Added	LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
N-Nitrosodi-n-propylamine	100	64.0		ug/L	64	64 - 130	
Benzoic acid	100	36.1	I	ug/L	36	10 - 130	
Hexachloroethane	100	63.5		ug/L	63	39 - 130	
Nitrobenzene	100	69.7		ug/L	70	56 - 130	
Isophorone	100	77.3		ug/L	77	59 - 130	
2-Nitrophenol	100	77.6		ug/L	78	54 - 130	
2,4-Dimethylphenol	100	64.9		ug/L	65	40 - 130	
Bis(2-chloroethoxy)methane	100	83.7		ug/L	84	64 - 130	
2,4-Dichlorophenol	100	74.1		ug/L	74	54 - 130	
Benzyl alcohol	100	66.9		ug/L	67	53 - 130	
1,2,4-Trichlorobenzene	100	62.9		ug/L	63	42 - 130	
Naphthalene	100	73.8		ug/L	74	50 - 130	
4-Chloroaniline	100	46.4		ug/L	46	42 - 130	
Hexachlorobutadiene	100	63.7		ug/L	64	36 - 130	
4-Chloro-3-methylphenol	100	73.9		ug/L	74	60 - 130	
2-Methylnaphthalene	100	74.4		ug/L	74	52 - 130	
Hexachlorocyclopentadiene	100	27.2		ug/L	27	10 - 130	
2,4,6-Trichlorophenol	100	76.0		ug/L	76	57 - 130	
2,4,5-Trichlorophenol	100	76.1		ug/L	76	61 - 130	
2-Chloronaphthalene	100	73.8		ug/L	74	53 - 130	
2-Nitroaniline	100	86.8		ug/L	87	60 - 130	
Dimethyl phthalate	100	82.2		ug/L	82	69 - 130	
Acenaphthylene	100	85.4		ug/L	85	60 - 130	
3-Nitroaniline	100	78.8		ug/L	79	54 - 130	
Acenaphthene	100	79.7		ug/L	80	55 - 130	
2,4-Dinitrophenol	100	78.8		ug/L	79	20 - 165	
4-Nitrophenol	100	74.7		ug/L	75	38 - 130	
Dibenzofuran	100	76.8		ug/L	77	58 - 130	
2,4-Dinitrotoluene	100	84.2		ug/L	84	63 - 130	
2,6-Dinitrotoluene	100	84.0		ug/L	84	65 - 130	
3 & 4 Methylphenol	100	74.3		ug/L	74	35 - 130	
Diethyl phthalate	100	83.8		ug/L	84	70 - 130	
4-Chlorophenyl phenyl ether	100	74.4		ug/L	74	57 - 130	
Fluorene	100	78.6		ug/L	79	61 - 130	
4-Nitroaniline	100	82.8		ug/L	83	54 - 130	
4,6-Dinitro-2-methylphenol	100	82.3		ug/L	82	45 - 134	
N-Nitrosodiphenylamine	100	80.3		ug/L	80	68 - 130	
4-Bromophenyl phenyl ether	100	79.5		ug/L	79	61 - 130	
Hexachlorobenzene	100	77.2		ug/L	77	52 - 130	
Pentachlorophenol	100	77.1		ug/L	77	42 - 138	
Phenanthrone	100	78.6		ug/L	79	62 - 130	
Anthracene	100	74.8		ug/L	75	61 - 130	
Di-n-butyl phthalate	100	78.8		ug/L	79	66 - 130	
Fluoranthene	100	73.5		ug/L	73	56 - 130	
Pyrene	100	80.5		ug/L	80	60 - 130	
Butyl benzyl phthalate	100	87.5		ug/L	87	66 - 130	
3,3'-Dichlorobenzidine	100	44.4	I	ug/L	44	27 - 130	
Benzo[a]anthracene	100	75.3		ug/L	75	58 - 130	
Bis(2-ethylhexyl) phthalate	100	78.8		ug/L	79	62 - 130	
Chrysene	100	77.5		ug/L	78	59 - 130	

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-243148/21-A

Matrix: Water

Analysis Batch: 243742

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 243148

Analyte	Spike Added	LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
1,4-Dioxane	100	56.7		ug/L		57	35 - 130
Di-n-octyl phthalate	100	87.9		ug/L		88	64 - 130
Benzo[b]fluoranthene	100	83.8		ug/L		84	51 - 130
Benzo[k]fluoranthene	100	72.9		ug/L		73	53 - 130
Benzo[a]pyrene	100	83.6		ug/L		84	61 - 130
Indeno[1,2,3-cd]pyrene	100	80.6		ug/L		81	47 - 130
Dibenz(a,h)anthracene	100	73.7		ug/L		74	55 - 130
Benzo[g,h,i]perylene	100	74.4		ug/L		74	54 - 130
Carbazole	100	85.2		ug/L		85	67 - 130

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Phenol-d5	72		25 - 130
2-Fluorophenol	75		25 - 130
2,4,6-Tribromophenol	88		31 - 141
Nitrobenzene-d5	68		39 - 130
2-Fluorobiphenyl	72		38 - 130
Terphenyl-d14	75		10 - 143

Lab Sample ID: LCSD 680-243148/22-A

Matrix: Water

Analysis Batch: 243742

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 243148

Analyte	Spike Added	LCSD		Unit	D	%Rec	Limits	RPD	Limit
		Result	Qualifier						
Phenol	100	67.0		ug/L		67	29 - 130	3	50
Bis(2-chloroethyl)ether	100	74.3		ug/L		74	56 - 130	1	50
bis(chloroisopropyl) ether	100	79.1		ug/L		79	55 - 130	1	50
2-Chlorophenol	100	77.7		ug/L		78	57 - 130	1	50
1,3-Dichlorobenzene	100	68.4		ug/L		68	41 - 130	1	50
1,4-Dichlorobenzene	100	67.5		ug/L		67	43 - 130	2	50
1,2-Dichlorobenzene	100	68.7		ug/L		69	43 - 130	1	50
2-Methylphenol	100	76.5		ug/L		77	55 - 130	2	50
N-Nitrosodi-n-propylamine	100	67.1		ug/L		67	64 - 130	5	50
Benzoic acid	100	33.3	I	ug/L		33	10 - 130	8	50
Hexachloroethane	100	62.4		ug/L		62	39 - 130	2	50
Nitrobenzene	100	68.1		ug/L		68	56 - 130	2	50
Isophorone	100	72.4		ug/L		72	59 - 130	7	50
2-Nitrophenol	100	75.8		ug/L		76	54 - 130	2	50
2,4-Dimethylphenol	100	63.6		ug/L		64	40 - 130	2	50
Bis(2-chloroethoxy)methane	100	81.1		ug/L		81	64 - 130	3	50
2,4-Dichlorophenol	100	70.5		ug/L		71	54 - 130	5	50
Benzyl alcohol	100	64.4		ug/L		64	53 - 130	4	50
1,2,4-Trichlorobenzene	100	60.7		ug/L		61	42 - 130	4	50
Naphthalene	100	71.3		ug/L		71	50 - 130	3	50
4-Chloroaniline	100	54.4		ug/L		54	42 - 130	16	50
Hexachlorobutadiene	100	62.1		ug/L		62	36 - 130	3	50
4-Chloro-3-methylphenol	100	69.3		ug/L		69	60 - 130	6	50
2-Methylnaphthalene	100	70.9		ug/L		71	52 - 130	5	50
Hexachlorocyclopentadiene	100	27.2		ug/L		27	10 - 130	0	50
2,4,6-Trichlorophenol	100	71.7		ug/L		72	57 - 130	6	50

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-243148/22-A

Matrix: Water

Analysis Batch: 243742

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 243148

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	Limits	RPD	RPD	Limit
	Added	Result	Qualifier							
2,4,5-Trichlorophenol	100	70.7		ug/L		71	61 - 130	7	50	
2-Chloronaphthalene	100	70.1		ug/L		70	53 - 130	5	50	
2-Nitroaniline	100	78.7		ug/L		79	60 - 130	10	50	
Dimethyl phthalate	100	75.4		ug/L		75	69 - 130	9	50	
Acenaphthylene	100	80.1		ug/L		80	60 - 130	6	50	
3-Nitroaniline	100	71.6		ug/L		72	54 - 130	10	50	
Acenaphthene	100	74.4		ug/L		74	55 - 130	7	50	
2,4-Dinitrophenol	100	70.8		ug/L		71	20 - 165	11	50	
4-Nitrophenol	100	67.3		ug/L		67	38 - 130	10	50	
Dibenzofuran	100	71.7		ug/L		72	58 - 130	7	50	
2,4-Dinitrotoluene	100	76.8		ug/L		77	63 - 130	9	50	
2,6-Dinitrotoluene	100	78.2		ug/L		78	65 - 130	7	50	
3 & 4 Methylphenol	100	71.4		ug/L		71	35 - 130	4	50	
Diethyl phthalate	100	76.4		ug/L		76	70 - 130	9	50	
4-Chlorophenyl phenyl ether	100	68.7		ug/L		69	57 - 130	8	50	
Fluorene	100	73.5		ug/L		73	61 - 130	7	50	
4-Nitroaniline	100	74.8		ug/L		75	54 - 130	10	50	
4,6-Dinitro-2-methylphenol	100	75.7		ug/L		76	45 - 134	8	50	
N-Nitrosodiphenylamine	100	74.5		ug/L		75	68 - 130	7	50	
4-Bromophenyl phenyl ether	100	73.1		ug/L		73	61 - 130	8	50	
Hexachlorobenzene	100	70.8		ug/L		71	52 - 130	9	50	
Pentachlorophenol	100	71.0		ug/L		71	42 - 138	8	50	
Phenanthrene	100	72.2		ug/L		72	62 - 130	9	50	
Anthracene	100	68.8		ug/L		69	61 - 130	8	50	
Di-n-butyl phthalate	100	72.6		ug/L		73	66 - 130	8	50	
Fluoranthene	100	67.1		ug/L		67	56 - 130	9	50	
Pyrene	100	74.5		ug/L		74	60 - 130	8	50	
Butyl benzyl phthalate	100	80.4		ug/L		80	66 - 130	8	50	
3,3'-Dichlorobenzidine	100	39.2	I	ug/L		39	27 - 130	12	50	
Benzo[a]anthracene	100	69.4		ug/L		69	58 - 130	8	50	
Bis(2-ethylhexyl) phthalate	100	72.5		ug/L		73	62 - 130	8	50	
Chrysene	100	70.4		ug/L		70	59 - 130	10	50	
1,4-Dioxane	100	55.2		ug/L		55	35 - 130	3	50	
Di-n-octyl phthalate	100	80.1		ug/L		80	64 - 130	9	50	
Benzo[b]fluoranthene	100	68.7		ug/L		69	51 - 130	20	50	
Benzo[k]fluoranthene	100	68.2		ug/L		68	53 - 130	7	50	
Benzo[a]pyrene	100	76.6		ug/L		77	61 - 130	9	50	
Indeno[1,2,3-cd]pyrene	100	69.0		ug/L		69	47 - 130	16	50	
Dibenz(a,h)anthracene	100	66.0		ug/L		66	55 - 130	11	50	
Benzo[g,h,i]perylene	100	65.6		ug/L		66	54 - 130	12	50	
Carbazole	100	78.3		ug/L		78	67 - 130	8	50	

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
Phenol-d5	74		25 - 130
2-Fluorophenol	79		25 - 130
2,4,6-Tribromophenol	85		31 - 141
Nitrobenzene-d5	69		39 - 130
2-Fluorobiphenyl	71		38 - 130
Terphenyl-d4	73		10 - 143

Lab Chronicle

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Client Sample ID: RW-4

Date Collected: 07/11/12 07:00
Date Received: 07/12/12 09:36

Lab Sample ID: 680-81065-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	5 mL	5 mL	126688	07/16/12 15:02	EC	TAL TAM
Total/NA	Analysis	8260B		1	5 mL	5 mL	243207	07/13/12 14:35	JD	TAL SAV
Total/NA	Prep	3520C			1057.2 mL	1 mL	243148	07/13/12 15:51	RBS	TAL SAV
Total/NA	Analysis	8270C		1			243742	07/18/12 14:11	BB	TAL SAV

Client Sample ID: RW-6

Date Collected: 07/11/12 07:20
Date Received: 07/12/12 09:36

Lab Sample ID: 680-81065-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	5 mL	5 mL	126688	07/16/12 15:24	EC	TAL TAM
Total/NA	Analysis	8260B		1	5 mL	5 mL	243207	07/13/12 15:03	JD	TAL SAV
Total/NA	Prep	3520C			1057.6 mL	1 mL	243148	07/13/12 15:51	RBS	TAL SAV
Total/NA	Analysis	8270C		1			243742	07/18/12 14:40	BB	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

Certification Summary

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Savannah	A2LA	DoD ELAP		0399-01
TestAmerica Savannah	A2LA	ISO/IEC 17025		399.01
TestAmerica Savannah	Alabama	State Program	4	41450
TestAmerica Savannah	Alaska (UST)	State Program	10	UST-104
TestAmerica Savannah	Arkansas DEQ	State Program	6	88-0692
TestAmerica Savannah	California	NELAC	9	3217CA
TestAmerica Savannah	Colorado	State Program	8	N/A
TestAmerica Savannah	Connecticut	State Program	1	PH-0161
TestAmerica Savannah	Florida	NELAC	4	E87052
TestAmerica Savannah	GA Dept. of Agriculture	State Program	4	N/A
TestAmerica Savannah	Georgia	State Program	4	803
TestAmerica Savannah	Georgia	State Program	4	N/A
TestAmerica Savannah	Guam	State Program	9	09-005r
TestAmerica Savannah	Hawaii	State Program	9	N/A
TestAmerica Savannah	Illinois	NELAC	5	200022
TestAmerica Savannah	Indiana	State Program	5	N/A
TestAmerica Savannah	Iowa	State Program	7	353
TestAmerica Savannah	Kentucky	State Program	4	90084
TestAmerica Savannah	Kentucky (UST)	State Program	4	18
TestAmerica Savannah	Louisiana	NELAC	6	30690
TestAmerica Savannah	Louisiana	NELAC	6	LA100015
TestAmerica Savannah	Maine	State Program	1	GA00006
TestAmerica Savannah	Maryland	State Program	3	250
TestAmerica Savannah	Massachusetts	State Program	1	M-GA006
TestAmerica Savannah	Michigan	State Program	5	9925
TestAmerica Savannah	Mississippi	State Program	4	N/A
TestAmerica Savannah	Montana	State Program	8	CERT0081
TestAmerica Savannah	Nebraska	State Program	7	TestAmerica-Savannah
TestAmerica Savannah	New Jersey	NELAC	2	GA769
TestAmerica Savannah	New Mexico	State Program	6	N/A
TestAmerica Savannah	New York	NELAC	2	10842
TestAmerica Savannah	North Carolina DENR	State Program	4	269
TestAmerica Savannah	North Carolina DHHS	State Program	4	13701
TestAmerica Savannah	Oklahoma	State Program	6	9984
TestAmerica Savannah	Pennsylvania	NELAC	3	68-00474
TestAmerica Savannah	Puerto Rico	State Program	2	GA00006
TestAmerica Savannah	Rhode Island	State Program	1	LAO00244
TestAmerica Savannah	South Carolina	State Program	4	98001
TestAmerica Savannah	Tennessee	State Program	4	TN02961
TestAmerica Savannah	Texas	NELAC	6	T104704185-08-TX
TestAmerica Savannah	USDA	Federal		SAV 3-04
TestAmerica Savannah	Vermont	State Program	1	87052
TestAmerica Savannah	Virginia	NELAC	3	460161
TestAmerica Savannah	Washington	State Program	10	C1794
TestAmerica Savannah	West Virginia	State Program	3	9950C
TestAmerica Savannah	West Virginia DEP	State Program	3	94
TestAmerica Savannah	Wisconsin	State Program	5	999819810
TestAmerica Savannah	Wyoming	State Program	8	8TMS-Q
TestAmerica Tampa	Alabama	State Program	4	40610
TestAmerica Tampa	Florida	NELAC	4	E84282
TestAmerica Tampa	Georgia	State Program	4	905
TestAmerica Tampa	USDA	Federal		P330-11-00177

Certification Summary

Client: Northrop Grumman Corp.
Project/Site: Recovery Well 7-12

TestAmerica Job ID: 680-81065-2

Laboratory	Authority	Program	EPA Region	Certification ID
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Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

1

2

3

4

5

6

7

8

9

10

11

12



APPENDIX B

WATER CONSERVATION PLANT LABORATORY ANALYTICAL DATA

1
2
3
4
5
6
7
8
9
10
11

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-78423-1

Client Project/Site: WCP 4-12

For:

Northrop Grumman Corp.

Integrated Systems

5000 U.S.#1 North

St. Augustine, Florida 32095

Attn: Mr. Rick Doria

Linda A. Wolfe

Authorized for release by:

4/24/2012 5:38:48 PM

Linda Wolfe

Project Manager I

linda.wolfe@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Method Summary	4
Definitions	5
Client Sample Results	6
Surrogate Summary	11
QC Sample Results	12
Chronicle	19
Chain of Custody	20
Certification Summary	21

Sample Summary

Client: Northrop Grumman Corp.
Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-78423-1	A/S 4-12	Water	04/09/12 07:00	04/10/12 09:11
680-78423-2	Perm 4/12	Water	04/09/12 07:30	04/10/12 09:11

Method Summary

Client: Northrop Grumman Corp.

Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8260C SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL TAM
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

Definitions/Glossary

Client: Northrop Grumman Corp.
Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
J	Estimated value; value may not be accurate.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J	Estimated value; value may not be accurate.

Glossary

Abbreviation

These commonly used abbreviations may or may not be present in this report.

⊗	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Northrop Grumman Corp.

Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Client Sample ID: A/S 4-12

Lab Sample ID: 680-78423-1

Matrix: Water

Date Collected: 04/09/12 07:00

Date Received: 04/10/12 09:11

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	<0.33	U	1.0	0.33	ug/L			04/16/12 17:59	1
Bromomethane	<0.80	U	1.0	0.80	ug/L			04/16/12 17:59	1
Vinyl chloride	4.2		1.0	0.18	ug/L			04/16/12 17:59	1
Chloroethane	<1.0	U	1.0	1.0	ug/L			04/16/12 17:59	1
Methylene Chloride	<1.0	U	5.0	1.0	ug/L			04/16/12 17:59	1
Acetone	<5.0	U	25	5.0	ug/L			04/16/12 17:59	1
Carbon disulfide	<0.60	U	2.0	0.60	ug/L			04/16/12 17:59	1
1,1-Dichloroethene	<0.11	U	1.0	0.11	ug/L			04/16/12 17:59	1
1,1-Dichloroethane	<0.25	U	1.0	0.25	ug/L			04/16/12 17:59	1
cis-1,2-Dichloroethene	0.44	I	1.0	0.15	ug/L			04/16/12 17:59	1
trans-1,2-Dichloroethene	<0.20	U	1.0	0.20	ug/L			04/16/12 17:59	1
Chloroform	3.3		1.0	0.14	ug/L			04/16/12 17:59	1
1,2-Dichloroethane	<0.10	U	1.0	0.10	ug/L			04/16/12 17:59	1
2-Butanone (MEK)	<1.0	U	10	1.0	ug/L			04/16/12 17:59	1
1,1,1-Trichloroethane	<0.50	U	1.0	0.50	ug/L			04/16/12 17:59	1
Carbon tetrachloride	<0.50	U J	1.0	0.50	ug/L			04/16/12 17:59	1
Dichlorobromomethane	<0.25	U	1.0	0.25	ug/L			04/16/12 17:59	1
1,1,2,2-Tetrachloroethane	<0.18	U	1.0	0.18	ug/L			04/16/12 17:59	1
1,2-Dichloropropane	<0.13	U	1.0	0.13	ug/L			04/16/12 17:59	1
trans-1,3-Dichloropropene	<0.21	U	1.0	0.21	ug/L			04/16/12 17:59	1
Trichloroethene	<0.13	U	1.0	0.13	ug/L			04/16/12 17:59	1
Chlorodibromomethane	<0.10	U	1.0	0.10	ug/L			04/16/12 17:59	1
1,1,2-Trichloroethane	<0.13	U	1.0	0.13	ug/L			04/16/12 17:59	1
Benzene	<0.25	U	1.0	0.25	ug/L			04/16/12 17:59	1
cis-1,3-Dichloropropene	<0.11	U	1.0	0.11	ug/L			04/16/12 17:59	1
Bromoform	<0.50	U	1.0	0.50	ug/L			04/16/12 17:59	1
2-Hexanone	<1.0	U	10	1.0	ug/L			04/16/12 17:59	1
4-Methyl-2-pentanone (MIBK)	<1.0	U	10	1.0	ug/L			04/16/12 17:59	1
Tetrachloroethene	<0.15	U	1.0	0.15	ug/L			04/16/12 17:59	1
Toluene	<0.33	U	1.0	0.33	ug/L			04/16/12 17:59	1
Chlorobenzene	<0.25	U	1.0	0.25	ug/L			04/16/12 17:59	1
Ethylbenzene	<0.11	U	1.0	0.11	ug/L			04/16/12 17:59	1
Styrene	<0.11	U	1.0	0.11	ug/L			04/16/12 17:59	1
Xylenes, Total	<0.20	U	2.0	0.20	ug/L			04/16/12 17:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	114		70 - 130					04/16/12 17:59	1
4-Bromofluorobenzene	90		70 - 130					04/16/12 17:59	1
Dibromofluoromethane	89		70 - 130					04/16/12 17:59	1

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	<1.0	U	2.0	1.0	ug/L			04/12/12 10:22	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	<0.79	U	9.5	0.79	ug/L			04/11/12 14:59	1
Bis(2-chloroethyl)ether	<1.0	U	9.5	1.0	ug/L			04/11/12 14:59	1
bis(chloroisopropyl) ether	<0.74	U	9.5	0.74	ug/L			04/11/12 14:59	1
2-Chlorophenol	<0.82	U	9.5	0.82	ug/L			04/11/12 14:59	1
1,3-Dichlorobenzene	<0.56	U	9.5	0.56	ug/L			04/11/12 14:59	1

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Client Sample ID: A/S 4-12
Date Collected: 04/09/12 07:00
Date Received: 04/10/12 09:11

Lab Sample ID: 680-78423-1
Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	<0.51	U	9.5	0.51	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
1,2-Dichlorobenzene	<0.50	U	9.5	0.50	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
2-Methylphenol	<0.84	U	9.5	0.84	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
N-Nitrosodi-n-propylamine	<0.68	U	9.5	0.68	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Benzoic acid	<4.7	U	47	4.7	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Hexachloroethane	<0.72	U	9.5	0.72	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Nitrobenzene	<0.69	U	9.5	0.69	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Isophorone	<0.85	U	9.5	0.85	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
2-Nitrophenol	<0.72	U	9.5	0.72	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
2,4-Dimethylphenol	<3.8	U	9.5	3.8	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Bis(2-chloroethoxy)methane	<0.89	U	9.5	0.89	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
2,4-Dichlorophenol	<1.0	U	9.5	1.0	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Benzyl alcohol	<1.0	U	9.5	1.0	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
1,2,4-Trichlorobenzene	<0.53	U	9.5	0.53	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Naphthalene	<0.66	U	9.5	0.66	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
4-Chloroaniline	<2.1	U	19	2.1	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Hexachlorobutadiene	<0.59	U	9.5	0.59	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
4-Chloro-3-methylphenol	<0.95	U	9.5	0.95	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
2-Methylnaphthalene	<0.74	U	9.5	0.74	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Hexachlorocyclopentadiene	<2.4	U	9.5	2.4	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
2,4,6-Trichlorophenol	<0.80	U	9.5	0.80	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
2,4,5-Trichlorophenol	<1.1	U	9.5	1.1	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
2-Chloronaphthalene	<0.76	U	9.5	0.76	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
2-Nitroaniline	<1.2	U	47	1.2	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Dimethyl phthalate	<0.94	U	9.5	0.94	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Acenaphthylene	<0.80	U	9.5	0.80	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
3-Nitroaniline	<4.7	U	47	4.7	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Acenaphthene	<0.72	U	9.5	0.72	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
2,4-Dinitrophenol	<9.5	U	47	9.5	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
4-Nitrophenol	<1.8	U	47	1.8	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Dibenzofuran	<0.75	U	9.5	0.75	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
2,4-Dinitrotoluene	<1.1	U	9.5	1.1	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
2,6-Dinitrotoluene	<1.0	U	9.5	1.0	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
3 & 4 Methylphenol	<1.2	U	9.5	1.2	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Diethyl phthalate	<0.83	U	9.5	0.83	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
4-Chlorophenyl phenyl ether	<0.80	U	9.5	0.80	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Fluorene	<0.91	U	9.5	0.91	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
4-Nitroaniline	<4.7	U	47	4.7	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
4,6-Dinitro-2-methylphenol	<9.5	U	47	9.5	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
N-Nitrosodiphenylamine	<0.87	U	9.5	0.87	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
4-Bromophenyl phenyl ether	<0.73	U	9.5	0.73	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Hexachlorobenzene	<0.75	U	9.5	0.75	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Pentachlorophenol	<1.9	U	47	1.9	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Phenanthrene	<0.73	U	9.5	0.73	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Anthracene	<0.65	U	9.5	0.65	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Di-n-butyl phthalate	<0.79	U	9.5	0.79	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Fluoranthene	<0.70	U	9.5	0.70	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Pyrene	<0.60	U	9.5	0.60	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Butyl benzyl phthalate	3.2	I	9.5	1.1	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
3,3'-Dichlorobenzidine	<28	U	57	28	ug/L	04/11/12 14:59	04/18/12 16:21	1	1
Benzo[a]anthracene	<0.52	U	9.5	0.52	ug/L	04/11/12 14:59	04/18/12 16:21	1	1

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Client Sample ID: A/S 4-12
Date Collected: 04/09/12 07:00
Date Received: 04/10/12 09:11

Lab Sample ID: 680-78423-1
Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	<1.5	U	9.5	1.5	ug/L		04/11/12 14:59	04/18/12 16:21	1
Chrysene	<0.48	U	9.5	0.48	ug/L		04/11/12 14:59	04/18/12 16:21	1
1,4-Dioxane	<3.2	U	9.5	3.2	ug/L		04/11/12 14:59	04/18/12 16:21	1
Di-n-octyl phthalate	<1.3	U	9.5	1.3	ug/L		04/11/12 14:59	04/18/12 16:21	1
Benzo[b]fluoranthene	<2.5	U	9.5	2.5	ug/L		04/11/12 14:59	04/18/12 16:21	1
Benzo[k]fluoranthene	<1.1	U	9.5	1.1	ug/L		04/11/12 14:59	04/18/12 16:21	1
Benzo[a]pyrene	<0.67	U	9.5	0.67	ug/L		04/11/12 14:59	04/18/12 16:21	1
Indeno[1,2,3-cd]pyrene	<0.95	U	9.5	0.95	ug/L		04/11/12 14:59	04/18/12 16:21	1
Dibenz(a,h)anthracene	<0.95	U	9.5	0.95	ug/L		04/11/12 14:59	04/18/12 16:21	1
Benzo[g,h,i]perylene	<0.82	U	9.5	0.82	ug/L		04/11/12 14:59	04/18/12 16:21	1
Carbazole	<0.67	U	9.5	0.67	ug/L		04/11/12 14:59	04/18/12 16:21	1
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Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Phenol-d5	65		25 - 130				04/11/12 14:59	04/18/12 16:21	1
2-Fluorophenol	71		25 - 130				04/11/12 14:59	04/18/12 16:21	1
2,4,6-Tribromophenol	85		31 - 141				04/11/12 14:59	04/18/12 16:21	1
Nitrobenzene-d5	75		39 - 130				04/11/12 14:59	04/18/12 16:21	1
2-Fluorobiphenyl	78		38 - 130				04/11/12 14:59	04/18/12 16:21	1
Terphenyl-d14	37		10 - 143				04/11/12 14:59	04/18/12 16:21	1

Client Sample ID: Perm 4/12

Date Collected: 04/09/12 07:30
Date Received: 04/10/12 09:11

Lab Sample ID: 680-78423-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	<0.33	U	1.0	0.33	ug/L		04/16/12 18:28	04/16/12 18:28	1
Bromomethane	<0.80	U	1.0	0.80	ug/L		04/16/12 18:28	04/16/12 18:28	1
Vinyl chloride	<0.18	U	1.0	0.18	ug/L		04/16/12 18:28	04/16/12 18:28	1
Chloroethane	<1.0	U	1.0	1.0	ug/L		04/16/12 18:28	04/16/12 18:28	1
Methylene Chloride	<1.0	U	5.0	1.0	ug/L		04/16/12 18:28	04/16/12 18:28	1
Acetone	<5.0	U	25	5.0	ug/L		04/16/12 18:28	04/16/12 18:28	1
Carbon disulfide	<0.60	U	2.0	0.60	ug/L		04/16/12 18:28	04/16/12 18:28	1
1,1-Dichloroethene	<0.11	U	1.0	0.11	ug/L		04/16/12 18:28	04/16/12 18:28	1
1,1-Dichloroethane	<0.25	U	1.0	0.25	ug/L		04/16/12 18:28	04/16/12 18:28	1
cis-1,2-Dichloroethene	<0.15	U	1.0	0.15	ug/L		04/16/12 18:28	04/16/12 18:28	1
trans-1,2-Dichloroethene	<0.20	U	1.0	0.20	ug/L		04/16/12 18:28	04/16/12 18:28	1
Chloroform	1.2		1.0	0.14	ug/L		04/16/12 18:28	04/16/12 18:28	1
1,2-Dichloroethane	<0.10	U	1.0	0.10	ug/L		04/16/12 18:28	04/16/12 18:28	1
2-Butanone (MEK)	<1.0	U	10	1.0	ug/L		04/16/12 18:28	04/16/12 18:28	1
1,1,1-Trichloroethane	<0.50	U	1.0	0.50	ug/L		04/16/12 18:28	04/16/12 18:28	1
Carbon tetrachloride	<0.50	U J	1.0	0.50	ug/L		04/16/12 18:28	04/16/12 18:28	1
Dichlorobromomethane	<0.25	U	1.0	0.25	ug/L		04/16/12 18:28	04/16/12 18:28	1
1,1,2,2-Tetrachloroethane	<0.18	U	1.0	0.18	ug/L		04/16/12 18:28	04/16/12 18:28	1
1,2-Dichloropropane	<0.13	U	1.0	0.13	ug/L		04/16/12 18:28	04/16/12 18:28	1
trans-1,3-Dichloropropene	<0.21	U	1.0	0.21	ug/L		04/16/12 18:28	04/16/12 18:28	1
Trichloroethene	<0.13	U	1.0	0.13	ug/L		04/16/12 18:28	04/16/12 18:28	1
Chlorodibromomethane	<0.10	U	1.0	0.10	ug/L		04/16/12 18:28	04/16/12 18:28	1
1,1,2-Trichloroethane	<0.13	U	1.0	0.13	ug/L		04/16/12 18:28	04/16/12 18:28	1
Benzene	<0.25	U	1.0	0.25	ug/L		04/16/12 18:28	04/16/12 18:28	1
cis-1,3-Dichloropropene	<0.11	U	1.0	0.11	ug/L		04/16/12 18:28	04/16/12 18:28	1

Client Sample Results

Client: Northrop Grumman Corp.

Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Client Sample ID: Perm 4/12

Date Collected: 04/09/12 07:30

Date Received: 04/10/12 09:11

Lab Sample ID: 680-78423-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	<0.50	U	1.0	0.50	ug/L			04/16/12 18:28	1
2-Hexanone	<1.0	U	10	1.0	ug/L			04/16/12 18:28	1
4-Methyl-2-pentanone (MIBK)	<1.0	U	10	1.0	ug/L			04/16/12 18:28	1
Tetrachloroethene	<0.15	U	1.0	0.15	ug/L			04/16/12 18:28	1
Toluene	<0.33	U	1.0	0.33	ug/L			04/16/12 18:28	1
Chlorobenzene	<0.25	U	1.0	0.25	ug/L			04/16/12 18:28	1
Ethylbenzene	<0.11	U	1.0	0.11	ug/L			04/16/12 18:28	1
Styrene	<0.11	U	1.0	0.11	ug/L			04/16/12 18:28	1
Xylenes, Total	<0.20	U	2.0	0.20	ug/L			04/16/12 18:28	1
Surrogate	%Recovery	Qualifier	Limits			D	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	114		70 - 130					04/16/12 18:28	1
4-Bromofluorobenzene	90		70 - 130					04/16/12 18:28	1
Dibromofluoromethane	90		70 - 130					04/16/12 18:28	1

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	<1.0	U	2.0	1.0	ug/L			04/12/12 11:49	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	<0.79	U	9.5	0.79	ug/L			04/11/12 14:59	04/18/12 16:49
Bis(2-chloroethyl)ether	<1.0	U	9.5	1.0	ug/L			04/11/12 14:59	04/18/12 16:49
bis(chloroisopropyl) ether	<0.74	U	9.5	0.74	ug/L			04/11/12 14:59	04/18/12 16:49
2-Chlorophenol	<0.83	U	9.5	0.83	ug/L			04/11/12 14:59	04/18/12 16:49
1,3-Dichlorobenzene	<0.56	U	9.5	0.56	ug/L			04/11/12 14:59	04/18/12 16:49
1,4-Dichlorobenzene	<0.51	U	9.5	0.51	ug/L			04/11/12 14:59	04/18/12 16:49
1,2-Dichlorobenzene	<0.50	U	9.5	0.50	ug/L			04/11/12 14:59	04/18/12 16:49
2-Methylphenol	<0.85	U	9.5	0.85	ug/L			04/11/12 14:59	04/18/12 16:49
N-Nitrosodi-n-propylamine	<0.69	U	9.5	0.69	ug/L			04/11/12 14:59	04/18/12 16:49
Benzoic acid	<4.8	U	48	4.8	ug/L			04/11/12 14:59	04/18/12 16:49
Hexachloroethane	<0.72	U	9.5	0.72	ug/L			04/11/12 14:59	04/18/12 16:49
Nitrobenzene	<0.69	U	9.5	0.69	ug/L			04/11/12 14:59	04/18/12 16:49
Isophorone	<0.86	U	9.5	0.86	ug/L			04/11/12 14:59	04/18/12 16:49
2-Nitrophenol	<0.72	U	9.5	0.72	ug/L			04/11/12 14:59	04/18/12 16:49
2,4-Dimethylphenol	<3.8	U	9.5	3.8	ug/L			04/11/12 14:59	04/18/12 16:49
Bis(2-chloroethoxy)methane	<0.89	U	9.5	0.89	ug/L			04/11/12 14:59	04/18/12 16:49
2,4-Dichlorophenol	<1.0	U	9.5	1.0	ug/L			04/11/12 14:59	04/18/12 16:49
Benzyl alcohol	<1.0	U	9.5	1.0	ug/L			04/11/12 14:59	04/18/12 16:49
1,2,4-Trichlorobenzene	<0.53	U	9.5	0.53	ug/L			04/11/12 14:59	04/18/12 16:49
Naphthalene	<0.67	U	9.5	0.67	ug/L			04/11/12 14:59	04/18/12 16:49
4-Chloroaniline	<2.1	U	19	2.1	ug/L			04/11/12 14:59	04/18/12 16:49
Hexachlorobutadiene	<0.59	U	9.5	0.59	ug/L			04/11/12 14:59	04/18/12 16:49
4-Chloro-3-methylphenol	<0.95	U	9.5	0.95	ug/L			04/11/12 14:59	04/18/12 16:49
2-Methylnaphthalene	<0.74	U	9.5	0.74	ug/L			04/11/12 14:59	04/18/12 16:49
Hexachlorocyclopentadiene	<2.4	U	9.5	2.4	ug/L			04/11/12 14:59	04/18/12 16:49
2,4,6-Trichlorophenol	<0.81	U	9.5	0.81	ug/L			04/11/12 14:59	04/18/12 16:49
2,4,5-Trichlorophenol	<1.1	U	9.5	1.1	ug/L			04/11/12 14:59	04/18/12 16:49
2-Chloronaphthalene	<0.76	U	9.5	0.76	ug/L			04/11/12 14:59	04/18/12 16:49
2-Nitroaniline	<1.2	U	48	1.2	ug/L			04/11/12 14:59	04/18/12 16:49
Dimethyl phthalate	<0.94	U	9.5	0.94	ug/L			04/11/12 14:59	04/18/12 16:49
Acenaphthylene	<0.81	U	9.5	0.81	ug/L			04/11/12 14:59	04/18/12 16:49

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Client Sample ID: Perm 4/12
Date Collected: 04/09/12 07:30
Date Received: 04/10/12 09:11

Lab Sample ID: 680-78423-2
Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3-Nitroaniline	<4.8	U	48	4.8	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Acenaphthene	<0.72	U	9.5	0.72	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
2,4-Dinitrophenol	<9.5	U	48	9.5	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
4-Nitrophenol	<1.8	U	48	1.8	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Dibenzofuran	<0.75	U	9.5	0.75	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
2,4-Dinitrotoluene	<1.1	U	9.5	1.1	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
2,6-Dinitrotoluene	<1.0	U	9.5	1.0	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
3 & 4 Methylphenol	<1.2	U	9.5	1.2	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Diethyl phthalate	<0.84	U	9.5	0.84	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
4-Chlorophenyl phenyl ether	<0.80	U	9.5	0.80	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Fluorene	<0.91	U	9.5	0.91	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
4-Nitroaniline	<4.8	U	48	4.8	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
4,6-Dinitro-2-methylphenol	<9.5	U	48	9.5	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
N-Nitrosodiphenylamine	<0.88	U	9.5	0.88	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
4-Bromophenyl phenyl ether	<0.73	U	9.5	0.73	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Hexachlorobenzene	<0.75	U	9.5	0.75	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Pentachlorophenol	<1.9	U	48	1.9	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Phanthrene	<0.73	U	9.5	0.73	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Anthracene	<0.66	U	9.5	0.66	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Di-n-butyl phthalate	<0.79	U	9.5	0.79	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Fluoranthene	<0.70	U	9.5	0.70	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Pyrene	<0.60	U	9.5	0.60	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Butyl benzyl phthalate	<1.1	U	9.5	1.1	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
3,3'-Dichlorobenzidine	<29	U	57	29	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Benzo[a]anthracene	<0.52	U	9.5	0.52	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Bis(2-ethylhexyl) phthalate	<1.5	U	9.5	1.5	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Chrysene	<0.49	U	9.5	0.49	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
1,4-Dioxane	<3.2	U	9.5	3.2	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Di-n-octyl phthalate	<1.3	U	9.5	1.3	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Benzo[b]fluoranthene	<2.5	U	9.5	2.5	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Benzo[k]fluoranthene	<1.1	U	9.5	1.1	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Benzo[a]pyrene	<0.68	U	9.5	0.68	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Indeno[1,2,3-cd]pyrene	<0.95	U	9.5	0.95	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Dibenz(a,h)anthracene	<0.95	U	9.5	0.95	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Benzof[g,h,i]perylene	<0.83	U	9.5	0.83	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Carbazole	<0.68	U	9.5	0.68	ug/L	04/11/12 14:59	04/18/12 16:49	04/18/12 16:49	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Phenol-d5	66		25 - 130			04/11/12 14:59	04/18/12 16:49	1	
2-Fluorophenol	72		25 - 130			04/11/12 14:59	04/18/12 16:49	1	
2,4,6-Tribromophenol	84		31 - 141			04/11/12 14:59	04/18/12 16:49	1	
Nitrobenzene-d5	81		39 - 130			04/11/12 14:59	04/18/12 16:49	1	
2-Fluorobiphenyl	82		38 - 130			04/11/12 14:59	04/18/12 16:49	1	
Terphenyl-d14	84		10 - 143			04/11/12 14:59	04/18/12 16:49	1	

Surrogate Summary

Client: Northrop Grumman Corp.
Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		TOL (70-130)	BFB (70-130)	DBFM (70-130)
680-78423-1	A/S 4-12	114	90	89
680-78423-2	Perm 4/12	114	90	90
LCS 680-234405/4	Lab Control Sample	96	97	100
LCSD 680-234405/5	Lab Control Sample Dup	99	102	103
MB 680-234405/7	Method Blank	105	98	102

Surrogate Legend

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene

DBFM = Dibromofluoromethane

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		PHL (25-130)	2FP (25-130)	TBP (31-141)	NBZ (39-130)	FBP (38-130)	TPH (10-143)
680-78423-1	A/S 4-12	65	71	85	75	78	37
680-78423-2	Perm 4/12	66	72	84	81	82	84
LCS 680-233943/11-A	Lab Control Sample	73	70	80	80	74	67
MB 680-233943/10-A	Method Blank	74	76	74	78	70	76

Surrogate Legend

PHL = Phenol-d5

2FP = 2-Fluorophenol

TBP = 2,4,6-Tribromophenol

NBZ = Nitrobenzene-d5

FBP = 2-Fluorobiphenyl

TPH = Terphenyl-d14

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-234405/7

Matrix: Water

Analysis Batch: 234405

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloromethane	<0.33	U	1.0	0.33	ug/L			04/16/12 11:46	1
Bromomethane	<0.80	U	1.0	0.80	ug/L			04/16/12 11:46	1
Vinyl chloride	<0.18	U	1.0	0.18	ug/L			04/16/12 11:46	1
Chloroethane	<1.0	U	1.0	1.0	ug/L			04/16/12 11:46	1
Methylene Chloride	<1.0	U	5.0	1.0	ug/L			04/16/12 11:46	1
Acetone	<5.0	U	25	5.0	ug/L			04/16/12 11:46	1
Carbon disulfide	<0.60	U	2.0	0.60	ug/L			04/16/12 11:46	1
1,1-Dichloroethene	<0.11	U	1.0	0.11	ug/L			04/16/12 11:46	1
1,1-Dichloroethane	<0.25	U	1.0	0.25	ug/L			04/16/12 11:46	1
cis-1,2-Dichloroethene	<0.15	U	1.0	0.15	ug/L			04/16/12 11:46	1
trans-1,2-Dichloroethene	<0.20	U	1.0	0.20	ug/L			04/16/12 11:46	1
Chloroform	<0.14	U	1.0	0.14	ug/L			04/16/12 11:46	1
1,2-Dichloroethane	<0.10	U	1.0	0.10	ug/L			04/16/12 11:46	1
2-Butanone (MEK)	<1.0	U	10	1.0	ug/L			04/16/12 11:46	1
1,1,1-Trichloroethane	<0.50	U	1.0	0.50	ug/L			04/16/12 11:46	1
Carbon tetrachloride	<0.50	U	1.0	0.50	ug/L			04/16/12 11:46	1
Dichlorobromomethane	<0.25	U	1.0	0.25	ug/L			04/16/12 11:46	1
1,1,2,2-Tetrachloroethane	<0.18	U	1.0	0.18	ug/L			04/16/12 11:46	1
1,2-Dichloropropane	<0.13	U	1.0	0.13	ug/L			04/16/12 11:46	1
trans-1,3-Dichloropropene	<0.21	U	1.0	0.21	ug/L			04/16/12 11:46	1
Trichloroethene	<0.13	U	1.0	0.13	ug/L			04/16/12 11:46	1
Chlorodibromomethane	<0.10	U	1.0	0.10	ug/L			04/16/12 11:46	1
1,1,2-Trichloroethane	<0.13	U	1.0	0.13	ug/L			04/16/12 11:46	1
Benzene	<0.25	U	1.0	0.25	ug/L			04/16/12 11:46	1
cis-1,3-Dichloropropene	<0.11	U	1.0	0.11	ug/L			04/16/12 11:46	1
Bromoform	<0.50	U	1.0	0.50	ug/L			04/16/12 11:46	1
2-Hexanone	<1.0	U	10	1.0	ug/L			04/16/12 11:46	1
4-Methyl-2-pentanone (MIBK)	<1.0	U	10	1.0	ug/L			04/16/12 11:46	1
Tetrachloroethene	<0.15	U	1.0	0.15	ug/L			04/16/12 11:46	1
Toluene	<0.33	U	1.0	0.33	ug/L			04/16/12 11:46	1
Chlorobenzene	<0.25	U	1.0	0.25	ug/L			04/16/12 11:46	1
Ethylbenzene	<0.11	U	1.0	0.11	ug/L			04/16/12 11:46	1
Styrene	<0.11	U	1.0	0.11	ug/L			04/16/12 11:46	1
Xylenes, Total	<0.20	U	2.0	0.20	ug/L			04/16/12 11:46	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		70 - 130		04/16/12 11:46	1
4-Bromofluorobenzene	98		70 - 130		04/16/12 11:46	1
Dibromofluoromethane	102		70 - 130		04/16/12 11:46	1

Lab Sample ID: LCS 680-234405/4

Matrix: Water

Analysis Batch: 234405

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS		Unit	D	%Rec	Limits
	Added	Result	Qualifier				
Chloromethane	50.0	44.9		ug/L	90	70 - 130	
Bromomethane	50.0	34.7		ug/L	69	23 - 165	
Vinyl chloride	50.0	50.0		ug/L	100	67 - 134	
Chloroethane	50.0	44.0		ug/L	88	56 - 152	

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-234405/4

Matrix: Water

Analysis Batch: 234405

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec.
		Result	Qualifier				
Methylene Chloride	50.0	48.9		ug/L		98	67 - 130
Acetone	100	95.1		ug/L		95	26 - 180
Carbon disulfide	50.0	48.6		ug/L		97	54 - 132
1,1-Dichloroethene	50.0	49.7		ug/L		99	66 - 131
1,1-Dichloroethane	50.0	49.1		ug/L		98	70 - 130
cis-1,2-Dichloroethene	50.0	49.1		ug/L		98	70 - 130
trans-1,2-Dichloroethene	50.0	49.1		ug/L		98	70 - 130
Chloroform	50.0	49.2		ug/L		98	70 - 130
1,2-Dichloroethane	50.0	46.0		ug/L		92	70 - 130
2-Butanone (MEK)	100	91.6		ug/L		92	49 - 172
1,1,1-Trichloroethane	50.0	46.0		ug/L		92	70 - 130
Carbon tetrachloride	50.0	33.7	J	ug/L		67	70 - 130
Dichlorobromomethane	50.0	45.9		ug/L		92	70 - 130
1,1,2,2-Tetrachloroethane	50.0	47.5		ug/L		95	70 - 130
1,2-Dichloropropane	50.0	48.4		ug/L		97	70 - 130
trans-1,3-Dichloropropene	50.0	46.7		ug/L		93	70 - 130
Trichloroethene	50.0	49.3		ug/L		99	70 - 130
Chlorodibromomethane	50.0	35.4		ug/L		71	70 - 130
1,1,2-Trichloroethane	50.0	48.8		ug/L		98	70 - 130
Benzene	50.0	46.9		ug/L		94	70 - 130
cis-1,3-Dichloropropene	50.0	47.4		ug/L		95	70 - 130
Bromoform	50.0	38.0		ug/L		76	70 - 130
2-Hexanone	100	101		ug/L		101	42 - 185
4-Methyl-2-pentanone (MIBK)	100	91.9		ug/L		92	70 - 130
Tetrachloroethene	50.0	49.0		ug/L		98	70 - 130
Toluene	50.0	46.4		ug/L		93	70 - 130
Chlorobenzene	50.0	48.2		ug/L		96	70 - 130
Ethylbenzene	50.0	48.2		ug/L		96	70 - 130
Styrene	50.0	49.9		ug/L		100	70 - 130
Xylenes, Total	150	148		ug/L		98	70 - 130

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	96		70 - 130
4-Bromofluorobenzene	97		70 - 130
Dibromofluoromethane	100		70 - 130

Lab Sample ID: LCSD 680-234405/5

Matrix: Water

Analysis Batch: 234405

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD		Unit	D	%Rec	%Rec.	RPD	RPD
		Result	Qualifier						
Chloromethane	50.0	46.9		ug/L		94	70 - 130	4.33	30
Bromomethane	50.0	38.6		ug/L		77	23 - 165	10.6	50
Vinyl chloride	50.0	51.3		ug/L		103	67 - 134	2.49	30
Chloroethane	50.0	45.8		ug/L		92	56 - 152	3.90	40
Methylene Chloride	50.0	51.1		ug/L		102	67 - 130	4.36	30
Acetone	100	99.0		ug/L		99	26 - 180	4.01	50
Carbon disulfide	50.0	51.2		ug/L		102	54 - 132	5.04	30
1,1-Dichloroethene	50.0	51.1		ug/L		102	66 - 131	2.74	30

QC Sample Results

Client: Northrop Grumman Corp.

Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-234405/5

Matrix: Water

Analysis Batch: 234405

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec.	Limits	RPD	RPD Limit
1,1-Dichloroethane	50.0	50.8		ug/L		102	70 - 130	3.38	30
cis-1,2-Dichloroethene	50.0	50.5		ug/L		101	70 - 130	2.66	30
trans-1,2-Dichloroethene	50.0	50.7		ug/L		101	70 - 130	3.21	30
Chloroform	50.0	51.1		ug/L		102	70 - 130	3.80	30
1,2-Dichloroethane	50.0	46.9		ug/L		94	70 - 130	1.93	30
2-Butanone (MEK)	100	95.4		ug/L		95	49 - 172	4.03	30
1,1,1-Trichloroethane	50.0	48.4		ug/L		97	70 - 130	4.94	30
Carbon tetrachloride	50.0	37.9		ug/L		76	70 - 130	11.7	30
Dichlorobromomethane	50.0	48.6		ug/L		97	70 - 130	5.70	30
1,1,2,2-Tetrachloroethane	50.0	50.2		ug/L		100	70 - 130	5.68	30
1,2-Dichloropropane	50.0	49.8		ug/L		100	70 - 130	2.79	30
trans-1,3-Dichloropropene	50.0	49.0		ug/L		98	70 - 130	4.89	50
Trichloroethene	50.0	51.7		ug/L		103	70 - 130	4.88	30
Chlorodibromomethane	50.0	38.8		ug/L		78	70 - 130	9.28	50
1,1,2-Trichloroethane	50.0	49.2		ug/L		98	70 - 130	1.00	30
Benzene	50.0	48.7		ug/L		97	70 - 130	3.78	30
cis-1,3-Dichloropropene	50.0	49.6		ug/L		99	70 - 130	4.70	30
Bromoform	50.0	41.3		ug/L		83	70 - 130	8.28	30
2-Hexanone	100	105		ug/L		105	42 - 185	3.94	30
4-Methyl-2-pentanone (MIBK)	100	96.1		ug/L		96	70 - 130	4.47	30
Tetrachloroethene	50.0	51.3		ug/L		103	70 - 130	4.69	30
Toluene	50.0	47.9		ug/L		96	70 - 130	3.26	30
Chlorobenzene	50.0	49.8		ug/L		100	70 - 130	3.41	30
Ethylbenzene	50.0	50.6		ug/L		101	70 - 130	4.82	30
Styrene	50.0	51.7		ug/L		103	70 - 130	3.38	30
Xylenes, Total	150	153		ug/L		102	70 - 130	3.29	30

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	99		70 - 130
4-Bromofluorobenzene	102		70 - 130
Dibromofluoromethane	103		70 - 130

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 660-123268/8

Matrix: Water

Analysis Batch: 123268

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	<1.0	U	2.0	1.0	ug/L			04/12/12 10:00	1

Lab Sample ID: LCS 660-123268/4

Matrix: Water

Analysis Batch: 123268

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCs Result	LCs Qualifier	Unit	D	%Rec.	Limits
1,4-Dioxane	25.0	21.8		ug/L		87	50 - 150

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Method: 8260C SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 660-123268/5

Matrix: Water

Analysis Batch: 123268

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.	RPD	RPD Limit
1,4-Dioxane	25.0	22.7		ug/L		91	50 - 150	4	50

Lab Sample ID: 680-78423-1 MS

Matrix: Water

Analysis Batch: 123268

Client Sample ID: A/S 4-12

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.
1,4-Dioxane	<1.0	U	25.0	26.7		ug/L		107	50 - 150

Lab Sample ID: 680-78423-1 MSD

Matrix: Water

Analysis Batch: 123268

Client Sample ID: A/S 4-12

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	RPD
1,4-Dioxane	<1.0	U	25.0	28.0		ug/L		112	50 - 150

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-233943/10-A

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 234885

Prep Batch: 233943

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Phenol	<0.83	U	10	0.83	ug/L		04/11/12 14:59	04/18/12 14:58	1
Bis(2-chloroethyl)ether	<1.1	U	10	1.1	ug/L		04/11/12 14:59	04/18/12 14:58	1
bis(chloroisopropyl) ether	<0.78	U	10	0.78	ug/L		04/11/12 14:59	04/18/12 14:58	1
2-Chlorophenol	<0.87	U	10	0.87	ug/L		04/11/12 14:59	04/18/12 14:58	1
1,3-Dichlorobenzene	<0.59	U	10	0.59	ug/L		04/11/12 14:59	04/18/12 14:58	1
1,4-Dichlorobenzene	<0.54	U	10	0.54	ug/L		04/11/12 14:59	04/18/12 14:58	1
1,2-Dichlorobenzene	<0.53	U	10	0.53	ug/L		04/11/12 14:59	04/18/12 14:58	1
2-Methylphenol	<0.89	U	10	0.89	ug/L		04/11/12 14:59	04/18/12 14:58	1
N-Nitrosodi-n-propylamine	<0.72	U	10	0.72	ug/L		04/11/12 14:59	04/18/12 14:58	1
Benzoic acid	<5.0	U	50	5.0	ug/L		04/11/12 14:59	04/18/12 14:58	1
Hexachloroethane	<0.76	U	10	0.76	ug/L		04/11/12 14:59	04/18/12 14:58	1
Nitrobenzene	<0.73	U	10	0.73	ug/L		04/11/12 14:59	04/18/12 14:58	1
Isophorone	<0.90	U	10	0.90	ug/L		04/11/12 14:59	04/18/12 14:58	1
2-Nitrophenol	<0.76	U	10	0.76	ug/L		04/11/12 14:59	04/18/12 14:58	1
2,4-Dimethylphenol	<4.0	U	10	4.0	ug/L		04/11/12 14:59	04/18/12 14:58	1
Bis(2-chloroethoxy)methane	<0.94	U	10	0.94	ug/L		04/11/12 14:59	04/18/12 14:58	1
2,4-Dichlorophenol	<1.1	U	10	1.1	ug/L		04/11/12 14:59	04/18/12 14:58	1
Benzyl alcohol	<1.1	U	10	1.1	ug/L		04/11/12 14:59	04/18/12 14:58	1
1,2,4-Trichlorobenzene	<0.56	U	10	0.56	ug/L		04/11/12 14:59	04/18/12 14:58	1
Naphthalene	<0.70	U	10	0.70	ug/L		04/11/12 14:59	04/18/12 14:58	1
4-Chloroaniline	<2.2	U	20	2.2	ug/L		04/11/12 14:59	04/18/12 14:58	1
Hexachlorobutadiene	<0.62	U	10	0.62	ug/L		04/11/12 14:59	04/18/12 14:58	1
4-Chloro-3-methylphenol	<1.0	U	10	1.0	ug/L		04/11/12 14:59	04/18/12 14:58	1
2-Methylnaphthalene	<0.78	U	10	0.78	ug/L		04/11/12 14:59	04/18/12 14:58	1
Hexachlorocyclopentadiene	<2.5	U	10	2.5	ug/L		04/11/12 14:59	04/18/12 14:58	1
2,4,6-Trichlorophenol	<0.85	U	10	0.85	ug/L		04/11/12 14:59	04/18/12 14:58	1
2,4,5-Trichlorophenol	<1.2	U	10	1.2	ug/L		04/11/12 14:59	04/18/12 14:58	1

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-233943/10-A

Matrix: Water

Analysis Batch: 234885

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 233943

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	MB	MB									
2-Chloronaphthalene	<0.80	U			10	0.80	ug/L				1
2-Nitroaniline	<1.3	U			50	1.3	ug/L				1
Dimethyl phthalate	<0.99	U			10	0.99	ug/L				1
Acenaphthylene	<0.85	U			10	0.85	ug/L				1
3-Nitroaniline	<5.0	U			50	5.0	ug/L				1
Acenaphthene	<0.76	U			10	0.76	ug/L				1
2,4-Dinitrophenol	<10	U			50	10	ug/L				1
4-Nitrophenol	<1.9	U			50	1.9	ug/L				1
Dibenzofuran	<0.79	U			10	0.79	ug/L				1
2,4-Dinitrotoluene	<1.2	U			10	1.2	ug/L				1
2,6-Dinitrotoluene	<1.1	U			10	1.1	ug/L				1
3 & 4 Methylphenol	<1.3	U			10	1.3	ug/L				1
Diethyl phthalate	<0.88	U			10	0.88	ug/L				1
4-Chlorophenyl phenyl ether	<0.84	U			10	0.84	ug/L				1
Fluorene	<0.96	U			10	0.96	ug/L				1
4-Nitroaniline	<5.0	U			50	5.0	ug/L				1
4,6-Dinitro-2-methylphenol	<10	U			50	10	ug/L				1
N-Nitrosodiphenylamine	<0.92	U			10	0.92	ug/L				1
4-Bromophenyl phenyl ether	<0.77	U			10	0.77	ug/L				1
Hexachlorobenzene	<0.79	U			10	0.79	ug/L				1
Pentachlorophenol	<2.0	U			50	2.0	ug/L				1
Phenanthrene	<0.77	U			10	0.77	ug/L				1
Anthracene	<0.69	U			10	0.69	ug/L				1
Di-n-butyl phthalate	<0.83	U			10	0.83	ug/L				1
Fluoranthene	<0.74	U			10	0.74	ug/L				1
Pyrene	<0.63	U			10	0.63	ug/L				1
Butyl benzyl phthalate	<1.2	U			10	1.2	ug/L				1
3,3'-Dichlorobenzidine	<30	U			60	30	ug/L				1
Benzo[a]anthracene	<0.55	U			10	0.55	ug/L				1
Bis(2-ethylhexyl) phthalate	<1.6	U			10	1.6	ug/L				1
Chrysene	<0.51	U			10	0.51	ug/L				1
1,4-Dioxane	<3.4	U			10	3.4	ug/L				1
Di-n-octyl phthalate	<1.4	U			10	1.4	ug/L				1
Benzo[b]fluoranthene	<2.6	U			10	2.6	ug/L				1
Benzo[k]fluoranthene	<1.2	U			10	1.2	ug/L				1
Benzo[a]pyrene	<0.71	U			10	0.71	ug/L				1
Indeno[1,2,3-cd]pyrene	<1.0	U			10	1.0	ug/L				1
Dibenz(a,h)anthracene	<1.0	U			10	1.0	ug/L				1
Benzo[g,h,i]perylene	<0.87	U			10	0.87	ug/L				1
Carbazole	<0.71	U			10	0.71	ug/L				1

Surrogate	MB	MB	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	MB	MB						
Phenol-d5			74		25 - 130			
2-Fluorophenol			76		25 - 130			
2,4,6-Tribromophenol			74		31 - 141			
Nitrobenzene-d5			78		39 - 130			
2-Fluorobiphenyl			70		38 - 130			
Terphenyl-d14			76		10 - 143			

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-233943/11-A

Matrix: Water

Analysis Batch: 234885

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 233943

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Phenol	100	66.8		ug/L	67	29 - 130	
Bis(2-chloroethyl)ether	100	87.4		ug/L	87	56 - 130	
bis(chloroisopropyl) ether	100	93.1		ug/L	93	55 - 130	
2-Chlorophenol	100	72.9		ug/L	73	57 - 130	
1,3-Dichlorobenzene	100	56.3		ug/L	56	41 - 130	
1,4-Dichlorobenzene	100	57.2		ug/L	57	43 - 130	
1,2-Dichlorobenzene	100	58.9		ug/L	59	43 - 130	
2-Methylphenol	100	74.7		ug/L	75	55 - 130	
N-Nitrosodi-n-propylamine	100	93.4		ug/L	93	64 - 130	
Benzoic acid	100	33.8	I	ug/L	34	10 - 130	
Hexachloroethane	100	62.1		ug/L	62	39 - 130	
Nitrobenzene	100	77.3		ug/L	77	56 - 130	
Isophorone	100	81.8		ug/L	82	59 - 130	
2-Nitrophenol	100	72.9		ug/L	73	54 - 130	
2,4-Dimethylphenol	100	66.2		ug/L	66	40 - 130	
Bis(2-chloroethoxy)methane	100	87.5		ug/L	88	64 - 130	
2,4-Dichlorophenol	100	70.6		ug/L	71	54 - 130	
Benzyl alcohol	100	49.5	J	ug/L	49	53 - 130	
1,2,4-Trichlorobenzene	100	59.0		ug/L	59	42 - 130	
Naphthalene	100	69.5		ug/L	69	50 - 130	
4-Chloroaniline	100	41.2	J	ug/L	41	42 - 130	
Hexachlorobutadiene	100	60.5		ug/L	60	36 - 130	
4-Chloro-3-methylphenol	100	76.6		ug/L	77	60 - 130	
2-Methylnaphthalene	100	70.2		ug/L	70	52 - 130	
Hexachlorocyclopentadiene	100	36.3		ug/L	36	10 - 130	
2,4,6-Trichlorophenol	100	74.3		ug/L	74	57 - 130	
2,4,5-Trichlorophenol	100	74.1		ug/L	74	61 - 130	
2-Chloronaphthalene	100	67.2		ug/L	67	53 - 130	
2-Nitroaniline	100	93.7		ug/L	94	60 - 130	
Dimethyl phthalate	100	85.4		ug/L	85	69 - 130	
Acenaphthylene	100	79.0		ug/L	79	60 - 130	
3-Nitroaniline	100	73.5		ug/L	73	54 - 130	
Acenaphthene	100	72.4		ug/L	72	55 - 130	
2,4-Dinitrophenol	100	99.8		ug/L	100	20 - 165	
4-Nitrophenol	100	75.6		ug/L	76	38 - 130	
Dibenzofuran	100	76.6		ug/L	77	58 - 130	
2,4-Dinitrotoluene	100	81.2		ug/L	81	63 - 130	
2,6-Dinitrotoluene	100	80.3		ug/L	80	65 - 130	
3 & 4 Methylphenol	100	75.8		ug/L	76	35 - 130	
Diethyl phthalate	100	92.6		ug/L	93	70 - 130	
4-Chlorophenyl phenyl ether	100	77.9		ug/L	78	57 - 130	
Fluorene	100	74.4		ug/L	74	61 - 130	
4-Nitroaniline	100	78.8		ug/L	79	54 - 130	
4,6-Dinitro-2-methylphenol	100	86.2		ug/L	86	45 - 134	
N-Nitrosodiphenylamine	100	81.0		ug/L	81	68 - 130	
4-Bromophenyl phenyl ether	100	73.6		ug/L	74	61 - 130	
Hexachlorobenzene	100	60.7		ug/L	61	52 - 130	
Pentachlorophenol	100	70.9		ug/L	71	42 - 138	
Phenanthrene	100	71.6		ug/L	72	62 - 130	

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-233943/11-A

Matrix: Water

Analysis Batch: 234885

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 233943

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec.
		Result	Qualifier				
Anthracene	100	69.0		ug/L	69	61 - 130	
Di-n-butyl phthalate	100	80.9		ug/L	81	66 - 130	
Fluoranthene	100	73.8		ug/L	74	56 - 130	
Pyrene	100	72.5		ug/L	73	60 - 130	
Butyl benzyl phthalate	100	79.4		ug/L	79	66 - 130	
3,3'-Dichlorobenzidine	100	46.9	I	ug/L	47	27 - 130	
Benzo[a]anthracene	100	68.5		ug/L	69	58 - 130	
Bis(2-ethylhexyl) phthalate	100	73.2		ug/L	73	62 - 130	
Chrysene	100	67.1		ug/L	67	59 - 130	
1,4-Dioxane	100	54.9		ug/L	55	35 - 130	
Di-n-octyl phthalate	100	72.6		ug/L	73	64 - 130	
Benzo[b]fluoranthene	100	72.3		ug/L	72	51 - 130	
Benzo[k]fluoranthene	100	67.9		ug/L	68	53 - 130	
Benzo[a]pyrene	100	73.1		ug/L	73	61 - 130	
Indeno[1,2,3-cd]pyrene	100	67.5		ug/L	68	47 - 130	
Dibenz(a,h)anthracene	100	68.7		ug/L	69	55 - 130	
Benzo[g,h,i]perylene	100	67.0		ug/L	67	54 - 130	
Carbazole	100	81.3		ug/L	81	67 - 130	

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Phenol-d5	73		25 - 130
2-Fluorophenol	70		25 - 130
2,4,6-Tribromophenol	80		31 - 141
Nitrobenzene-d5	80		39 - 130
2-Fluorobiphenyl	74		38 - 130
Terphenyl-d14	67		10 - 143

Lab Chronicle

Client: Northrop Grumman Corp.

Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Client Sample ID: A/S 4-12

Lab Sample ID: 680-78423-1

Date Collected: 04/09/12 07:00

Matrix: Water

Date Received: 04/10/12 09:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	123268	04/12/12 10:22	AP	TAL TAM
Total/NA	Analysis	8260B		1	234405	04/16/12 17:59	AJMC	TAL SAV
Total/NA	Prep	3520C			233943	04/11/12 14:59	RBS	TAL SAV
Total/NA	Analysis	8270C		1	234885	04/18/12 16:21	MES	TAL SAV

Client Sample ID: Perm 4/12

Lab Sample ID: 680-78423-2

Date Collected: 04/09/12 07:30

Matrix: Water

Date Received: 04/10/12 09:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	123268	04/12/12 11:49	AP	TAL TAM
Total/NA	Analysis	8260B		1	234405	04/16/12 18:28	AJMC	TAL SAV
Total/NA	Prep	3520C			233943	04/11/12 14:59	RBS	TAL SAV
Total/NA	Analysis	8270C		1	234885	04/18/12 16:49	MES	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

Serial Number 50104

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE <i>WCP 4-12</i>	PROJECT NO.	PROJECT LOCATION (STATE)	MATRIX TYPE	REQUIRED ANALYSIS						PAGE 1 OF 1		
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.									STANDARD REPORT DELIVERY	
CLIENT (SITE) PM <i>R. Doria</i>	CLIENT PHONE <i>904 865 3828</i>	CLIENT FAX									DATE DUE <i>14/4/2012</i>	
CLIENT NAME <i>Nicole Brown</i>	CLIENT E-MAIL										EXPEDITED REPORT DELIVERY (SURCHARGE)	
CLIENT ADDRESS <i>5000 US 1 North St. Augustine, FL 32055</i>											DATE DUE <i>14/4/2012</i>	
COMPANY CONTRACTING THIS WORK (if applicable)												NUMBER OF COOLERS SUBMITTED PER SHIPMENT:
SAMPLE	SAMPLE IDENTIFICATION			COMPOSITE (C) OR GRAB (G) / INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NUMBER OF CONTAINERS SUBMITTED				REMARKS
4-6-12 0700	<i>* A/S 4-12</i>			CX				2	3	3		
4-6-12 0730	<i>Perm 4-12</i>			GX				2	3	3		
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)		DATE	TIME		
<i>Linda Smith</i>					<i>4-9-12</i>	<i>1:00PM</i>						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME		
<i>Mark Olson</i>					<i>4-9-12</i>	<i>1:00PM</i>						
LABORATORY USE ONLY												
RECEIVED FOR LABORATORY BY: (SIGNATURE) <i>Heinkel</i>	DATE <i>4/10/12</i>	TIME <i>094</i>	CUSTODY INTACT YES <input type="radio"/> NO <input checked="" type="radio"/>	CUSTODY SEAL NO. <i>180-78423</i>	SAVANNAH LOG NO. <i>180-78423</i>	LABORATORY REMARKS <i>2.0°C</i>						

Certification Summary

Client: Northrop Grumman Corp.

Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Savannah	A2LA	DoD ELAP		0399-01
TestAmerica Savannah	A2LA	ISO/IEC 17025		399.01
TestAmerica Savannah	Alabama	State Program	4	41450
TestAmerica Savannah	Arkansas	State Program	6	N/A
TestAmerica Savannah	Arkansas DEQ	State Program	6	88-0692
TestAmerica Savannah	California	NELAC	9	3217CA
TestAmerica Savannah	Colorado	State Program	8	N/A
TestAmerica Savannah	Connecticut	State Program	1	PH-0161
TestAmerica Savannah	Florida	NELAC	4	E87052
TestAmerica Savannah	GA Dept. of Agriculture	State Program	4	N/A
TestAmerica Savannah	Georgia	State Program	4	803
TestAmerica Savannah	Georgia	State Program	4	N/A
TestAmerica Savannah	Guam	State Program	9	09-005r
TestAmerica Savannah	Hawaii	State Program	9	N/A
TestAmerica Savannah	Illinois	NELAC	5	200022
TestAmerica Savannah	Indiana	State Program	5	N/A
TestAmerica Savannah	Iowa	State Program	7	353
TestAmerica Savannah	Kentucky	State Program	4	90084
TestAmerica Savannah	Kentucky (UST)	State Program	4	18
TestAmerica Savannah	Louisiana	NELAC	6	30690
TestAmerica Savannah	Louisiana	NELAC	6	LA100015
TestAmerica Savannah	Maine	State Program	1	GA00006
TestAmerica Savannah	Maryland	State Program	3	250
TestAmerica Savannah	Massachusetts	State Program	1	M-GA006
TestAmerica Savannah	Michigan	State Program	5	9925
TestAmerica Savannah	Mississippi	State Program	4	N/A
TestAmerica Savannah	Montana	State Program	8	CERT0081
TestAmerica Savannah	Nebraska	State Program	7	TestAmerica-Savannah
TestAmerica Savannah	New Jersey	NELAC	2	GA769
TestAmerica Savannah	New Mexico	State Program	6	N/A
TestAmerica Savannah	New York	NELAC	2	10842
TestAmerica Savannah	North Carolina DENR	State Program	4	269
TestAmerica Savannah	North Carolina DHHS	State Program	4	13701
TestAmerica Savannah	Oklahoma	State Program	6	9984
TestAmerica Savannah	Pennsylvania	NELAC	3	68-00474
TestAmerica Savannah	Puerto Rico	State Program	2	GA00006
TestAmerica Savannah	Rhode Island	State Program	1	LAO00244
TestAmerica Savannah	South Carolina	State Program	4	98001
TestAmerica Savannah	Tennessee	State Program	4	TN02961
TestAmerica Savannah	Texas	NELAC	6	T104704185-08-TX
TestAmerica Savannah	USDA	Federal		SAV 3-04
TestAmerica Savannah	Vermont	State Program	1	87052
TestAmerica Savannah	Virginia	NELAC	3	460161
TestAmerica Savannah	Washington	State Program	10	C1794
TestAmerica Savannah	West Virginia	State Program	3	9950C
TestAmerica Savannah	West Virginia DEP	State Program	3	94
TestAmerica Savannah	Wisconsin	State Program	5	999819810
TestAmerica Savannah	Wyoming	State Program	8	8TMS-Q
TestAmerica Tampa	Alabama	State Program	4	40610
TestAmerica Tampa	Florida	NELAC	4	E84282
TestAmerica Tampa	Georgia	State Program	4	905
TestAmerica Tampa	USDA	Federal		P330-11-00177

Certification Summary

Client: Northrop Grumman Corp.

Project/Site: WCP 4-12

TestAmerica Job ID: 680-78423-1

Laboratory	Authority	Program	EPA Region	Certification ID
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Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404

Tel: (912)354-7858

TestAmerica Job ID: 680-81065-1

Client Project/Site: WCP 7-12

For:

Northrop Grumman Corp.

Integrated Systems

5000 U.S.#1 North

St. Augustine, Florida 32095

Attn: Mr. Rick Doria

Linda A. Wolfe

Authorized for release by:

7/23/2012 11:33:25 AM

Linda Wolfe

Project Manager I

linda.wolfe@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Sample Summary	4
Method Summary	5
Definitions	6
Client Sample Results	7
Surrogate Summary	12
QC Sample Results	13
Chronicle	21
Chain of Custody	22
Certification Summary	23

Case Narrative

Client: Northrop Grumman Corp.
Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Job ID: 680-81065-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Northrop Grumman Corp.

Project: WCP 7-12

Report Number: 680-81065-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 07/12/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.6 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples A/S 7-12 (680-81065-1) and PERM 7-12 (680-81065-2) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 07/13/2012.

No difficulties were encountered during the volatiles analyses.

All quality control parameters were within the acceptance limits.

VOLATILE ORGANIC COMPOUNDS (GC/MS) - SELECTED ION MONITORING (SIM)

Samples A/S 7-12 (680-81065-1) and PERM 7-12 (680-81065-2) were analyzed for Volatile Organic Compounds (GC/MS) - Selected Ion Monitoring (SIM) in accordance with EPA SW846 Method 8260C. The samples were analyzed on 07/16/2012.

No difficulties were encountered during the VOC SIM analyses.

All quality control parameters were within the acceptance limits.

SEMOVOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples A/S 7-12 (680-81065-1) and PERM 7-12 (680-81065-2) were analyzed for semivolatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 07/13/2012 and analyzed on 07/18/2012.

No difficulties were encountered during the semivolatiles analyses.

All quality control parameters were within the acceptance limits.

Sample Summary

Client: Northrop Grumman Corp.

Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-81065-1	A/S 7-12	Water	07/11/12 07:30	07/12/12 09:36
680-81065-2	PERM 7-12	Water	07/11/12 07:45	07/12/12 09:36

Method Summary

Client: Northrop Grumman Corp.

Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8260C SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL TAM
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

Definitions/Glossary

Client: Northrop Grumman Corp.
Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

Glossary

Abbreviation

These commonly used abbreviations may or may not be present in this report.

☒	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Northrop Grumman Corp.

Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Client Sample ID: A/S 7-12

Lab Sample ID: 680-81065-1

Matrix: Water

Date Collected: 07/11/12 07:30

Date Received: 07/12/12 09:36

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	<0.33	U	1.0	0.33	ug/L			07/13/12 13:39	1
Bromomethane	<0.80	U	1.0	0.80	ug/L			07/13/12 13:39	1
Vinyl chloride	2.5		1.0	0.18	ug/L			07/13/12 13:39	1
Chloroethane	<1.0	U	1.0	1.0	ug/L			07/13/12 13:39	1
Methylene Chloride	<1.0	U	5.0	1.0	ug/L			07/13/12 13:39	1
Acetone	<5.0	U	25	5.0	ug/L			07/13/12 13:39	1
Carbon disulfide	<0.60	U	2.0	0.60	ug/L			07/13/12 13:39	1
1,1-Dichloroethene	<0.11	U	1.0	0.11	ug/L			07/13/12 13:39	1
1,1-Dichloroethane	<0.25	U	1.0	0.25	ug/L			07/13/12 13:39	1
cis-1,2-Dichloroethene	0.36	I	1.0	0.15	ug/L			07/13/12 13:39	1
trans-1,2-Dichloroethene	<0.20	U	1.0	0.20	ug/L			07/13/12 13:39	1
Chloroform	<0.14	U	1.0	0.14	ug/L			07/13/12 13:39	1
1,2-Dichloroethane	<0.10	U	1.0	0.10	ug/L			07/13/12 13:39	1
2-Butanone (MEK)	<1.0	U	10	1.0	ug/L			07/13/12 13:39	1
1,1,1-Trichloroethane	<0.50	U	1.0	0.50	ug/L			07/13/12 13:39	1
Carbon tetrachloride	<0.50	U	1.0	0.50	ug/L			07/13/12 13:39	1
Dichlorobromomethane	<0.25	U	1.0	0.25	ug/L			07/13/12 13:39	1
1,1,2,2-Tetrachloroethane	<0.18	U	1.0	0.18	ug/L			07/13/12 13:39	1
1,2-Dichloropropane	<0.13	U	1.0	0.13	ug/L			07/13/12 13:39	1
trans-1,3-Dichloropropene	<0.21	U	1.0	0.21	ug/L			07/13/12 13:39	1
Trichloroethene	<0.13	U	1.0	0.13	ug/L			07/13/12 13:39	1
Chlorodibromomethane	<0.10	U	1.0	0.10	ug/L			07/13/12 13:39	1
1,1,2-Trichloroethane	<0.13	U	1.0	0.13	ug/L			07/13/12 13:39	1
Benzene	<0.25	U	1.0	0.25	ug/L			07/13/12 13:39	1
cis-1,3-Dichloropropene	<0.11	U	1.0	0.11	ug/L			07/13/12 13:39	1
Bromoform	<0.50	U	1.0	0.50	ug/L			07/13/12 13:39	1
2-Hexanone	<1.0	U	10	1.0	ug/L			07/13/12 13:39	1
4-Methyl-2-pentanone (MIBK)	<1.0	U	10	1.0	ug/L			07/13/12 13:39	1
Tetrachloroethene	<0.15	U	1.0	0.15	ug/L			07/13/12 13:39	1
Toluene	<0.33	U	1.0	0.33	ug/L			07/13/12 13:39	1
Chlorobenzene	<0.25	U	1.0	0.25	ug/L			07/13/12 13:39	1
Ethylbenzene	<0.11	U	1.0	0.11	ug/L			07/13/12 13:39	1
Styrene	<0.11	U	1.0	0.11	ug/L			07/13/12 13:39	1
Xylenes, Total	<0.20	U	2.0	0.20	ug/L			07/13/12 13:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130					07/13/12 13:39	1
4-Bromofluorobenzene	97		70 - 130					07/13/12 13:39	1
Dibromofluoromethane	103		70 - 130					07/13/12 13:39	1

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	<1.0	U	2.0	1.0	ug/L			07/16/12 14:25	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	<0.79	U	9.5	0.79	ug/L		07/13/12 15:51	07/18/12 13:12	1
Bis(2-chloroethyl)ether	<1.0	U	9.5	1.0	ug/L		07/13/12 15:51	07/18/12 13:12	1
bis(chloroisopropyl) ether	<0.74	U	9.5	0.74	ug/L		07/13/12 15:51	07/18/12 13:12	1
2-Chlorophenol	<0.82	U	9.5	0.82	ug/L		07/13/12 15:51	07/18/12 13:12	1
1,3-Dichlorobenzene	<0.56	U	9.5	0.56	ug/L		07/13/12 15:51	07/18/12 13:12	1

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Client Sample ID: A/S 7-12
Date Collected: 07/11/12 07:30
Date Received: 07/12/12 09:36

Lab Sample ID: 680-81065-1
Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	<0.51	U	9.5	0.51	ug/L	07/13/12 15:51	07/18/12 13:12		1
1,2-Dichlorobenzene	<0.50	U	9.5	0.50	ug/L	07/13/12 15:51	07/18/12 13:12		1
2-Methylphenol	<0.84	U	9.5	0.84	ug/L	07/13/12 15:51	07/18/12 13:12		1
N-Nitrosodi-n-propylamine	<0.68	U	9.5	0.68	ug/L	07/13/12 15:51	07/18/12 13:12		1
Benzoic acid	<4.7	U	47	4.7	ug/L	07/13/12 15:51	07/18/12 13:12		1
Hexachloroethane	<0.72	U	9.5	0.72	ug/L	07/13/12 15:51	07/18/12 13:12		1
Nitrobenzene	<0.69	U	9.5	0.69	ug/L	07/13/12 15:51	07/18/12 13:12		1
Isophorone	<0.85	U	9.5	0.85	ug/L	07/13/12 15:51	07/18/12 13:12		1
2-Nitrophenol	<0.72	U	9.5	0.72	ug/L	07/13/12 15:51	07/18/12 13:12		1
2,4-Dimethylphenol	<3.8	U	9.5	3.8	ug/L	07/13/12 15:51	07/18/12 13:12		1
Bis(2-chloroethoxy)methane	<0.89	U	9.5	0.89	ug/L	07/13/12 15:51	07/18/12 13:12		1
2,4-Dichlorophenol	<1.0	U	9.5	1.0	ug/L	07/13/12 15:51	07/18/12 13:12		1
Benzyl alcohol	<1.0	U	9.5	1.0	ug/L	07/13/12 15:51	07/18/12 13:12		1
1,2,4-Trichlorobenzene	<0.53	U	9.5	0.53	ug/L	07/13/12 15:51	07/18/12 13:12		1
Naphthalene	<0.66	U	9.5	0.66	ug/L	07/13/12 15:51	07/18/12 13:12		1
4-Chloroaniline	<2.1	U	19	2.1	ug/L	07/13/12 15:51	07/18/12 13:12		1
Hexachlorobutadiene	<0.59	U	9.5	0.59	ug/L	07/13/12 15:51	07/18/12 13:12		1
4-Chloro-3-methylphenol	<0.95	U	9.5	0.95	ug/L	07/13/12 15:51	07/18/12 13:12		1
2-Methylnaphthalene	<0.74	U	9.5	0.74	ug/L	07/13/12 15:51	07/18/12 13:12		1
Hexachlorocyclopentadiene	<2.4	U	9.5	2.4	ug/L	07/13/12 15:51	07/18/12 13:12		1
2,4,6-Trichlorophenol	<0.80	U	9.5	0.80	ug/L	07/13/12 15:51	07/18/12 13:12		1
2,4,5-Trichlorophenol	<1.1	U	9.5	1.1	ug/L	07/13/12 15:51	07/18/12 13:12		1
2-Chloronaphthalene	<0.76	U	9.5	0.76	ug/L	07/13/12 15:51	07/18/12 13:12		1
2-Nitroaniline	<1.2	U	47	1.2	ug/L	07/13/12 15:51	07/18/12 13:12		1
Dimethyl phthalate	<0.94	U	9.5	0.94	ug/L	07/13/12 15:51	07/18/12 13:12		1
Acenaphthylene	<0.80	U	9.5	0.80	ug/L	07/13/12 15:51	07/18/12 13:12		1
3-Nitroaniline	<4.7	U	47	4.7	ug/L	07/13/12 15:51	07/18/12 13:12		1
Acenaphthene	<0.72	U	9.5	0.72	ug/L	07/13/12 15:51	07/18/12 13:12		1
2,4-Dinitrophenol	<9.5	U	47	9.5	ug/L	07/13/12 15:51	07/18/12 13:12		1
4-Nitrophenol	<1.8	U	47	1.8	ug/L	07/13/12 15:51	07/18/12 13:12		1
Dibenzofuran	<0.75	U	9.5	0.75	ug/L	07/13/12 15:51	07/18/12 13:12		1
2,4-Dinitrotoluene	<1.1	U	9.5	1.1	ug/L	07/13/12 15:51	07/18/12 13:12		1
2,6-Dinitrotoluene	<1.0	U	9.5	1.0	ug/L	07/13/12 15:51	07/18/12 13:12		1
3 & 4 Methylphenol	<1.2	U	9.5	1.2	ug/L	07/13/12 15:51	07/18/12 13:12		1
Diethyl phthalate	<0.83	U	9.5	0.83	ug/L	07/13/12 15:51	07/18/12 13:12		1
4-Chlorophenyl phenyl ether	<0.79	U	9.5	0.79	ug/L	07/13/12 15:51	07/18/12 13:12		1
Fluorene	<0.91	U	9.5	0.91	ug/L	07/13/12 15:51	07/18/12 13:12		1
4-Nitroaniline	<4.7	U	47	4.7	ug/L	07/13/12 15:51	07/18/12 13:12		1
4,6-Dinitro-2-methylphenol	<9.5	U	47	9.5	ug/L	07/13/12 15:51	07/18/12 13:12		1
N-Nitrosodiphenylamine	<0.87	U	9.5	0.87	ug/L	07/13/12 15:51	07/18/12 13:12		1
4-Bromophenyl phenyl ether	<0.73	U	9.5	0.73	ug/L	07/13/12 15:51	07/18/12 13:12		1
Hexachlorobenzene	<0.75	U	9.5	0.75	ug/L	07/13/12 15:51	07/18/12 13:12		1
Pentachlorophenol	<1.9	U	47	1.9	ug/L	07/13/12 15:51	07/18/12 13:12		1
Phenanthrene	<0.73	U	9.5	0.73	ug/L	07/13/12 15:51	07/18/12 13:12		1
Anthracene	<0.65	U	9.5	0.65	ug/L	07/13/12 15:51	07/18/12 13:12		1
Di-n-butyl phthalate	<0.79	U	9.5	0.79	ug/L	07/13/12 15:51	07/18/12 13:12		1
Fluoranthene	<0.70	U	9.5	0.70	ug/L	07/13/12 15:51	07/18/12 13:12		1
Pyrene	<0.60	U	9.5	0.60	ug/L	07/13/12 15:51	07/18/12 13:12		1
Butyl benzyl phthalate	1.4	I	9.5	1.1	ug/L	07/13/12 15:51	07/18/12 13:12		1
3,3'-Dichlorobenzidine	<28	U	57	28	ug/L	07/13/12 15:51	07/18/12 13:12		1
Benzo[a]anthracene	<0.52	U	9.5	0.52	ug/L	07/13/12 15:51	07/18/12 13:12		1

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Client Sample ID: A/S 7-12
Date Collected: 07/11/12 07:30
Date Received: 07/12/12 09:36

Lab Sample ID: 680-81065-1
Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	<1.5	U	9.5	1.5	ug/L		07/13/12 15:51	07/18/12 13:12	1
Chrysene	<0.48	U	9.5	0.48	ug/L		07/13/12 15:51	07/18/12 13:12	1
1,4-Dioxane	<3.2	U	9.5	3.2	ug/L		07/13/12 15:51	07/18/12 13:12	1
Di-n-octyl phthalate	<1.3	U	9.5	1.3	ug/L		07/13/12 15:51	07/18/12 13:12	1
Benzo[b]fluoranthene	<2.5	U	9.5	2.5	ug/L		07/13/12 15:51	07/18/12 13:12	1
Benzo[k]fluoranthene	<1.1	U	9.5	1.1	ug/L		07/13/12 15:51	07/18/12 13:12	1
Benzo[a]pyrene	<0.67	U	9.5	0.67	ug/L		07/13/12 15:51	07/18/12 13:12	1
Indeno[1,2,3-cd]pyrene	<0.95	U	9.5	0.95	ug/L		07/13/12 15:51	07/18/12 13:12	1
Dibenz(a,h)anthracene	<0.95	U	9.5	0.95	ug/L		07/13/12 15:51	07/18/12 13:12	1
Benzo[g,h,i]perylene	<0.82	U	9.5	0.82	ug/L		07/13/12 15:51	07/18/12 13:12	1
Carbazole	<0.67	U	9.5	0.67	ug/L		07/13/12 15:51	07/18/12 13:12	1
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Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Phenol-d5	79		25 - 130				07/13/12 15:51	07/18/12 13:12	1
2-Fluorophenol	77		25 - 130				07/13/12 15:51	07/18/12 13:12	1
2,4,6-Tribromophenol	94		31 - 141				07/13/12 15:51	07/18/12 13:12	1
Nitrobenzene-d5	79		39 - 130				07/13/12 15:51	07/18/12 13:12	1
2-Fluorobiphenyl	84		38 - 130				07/13/12 15:51	07/18/12 13:12	1
Terphenyl-d14	56		10 - 143				07/13/12 15:51	07/18/12 13:12	1

Client Sample ID: PERM 7-12

Lab Sample ID: 680-81065-2

Matrix: Water

Date Collected: 07/11/12 07:45
Date Received: 07/12/12 09:36

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	<0.33	U	1.0	0.33	ug/L		07/13/12 14:07	07/13/12 14:07	1
Bromomethane	<0.80	U	1.0	0.80	ug/L		07/13/12 14:07	07/13/12 14:07	1
Vinyl chloride	<0.18	U	1.0	0.18	ug/L		07/13/12 14:07	07/13/12 14:07	1
Chloroethane	<1.0	U	1.0	1.0	ug/L		07/13/12 14:07	07/13/12 14:07	1
Methylene Chloride	<1.0	U	5.0	1.0	ug/L		07/13/12 14:07	07/13/12 14:07	1
Acetone	<5.0	U	25	5.0	ug/L		07/13/12 14:07	07/13/12 14:07	1
Carbon disulfide	<0.60	U	2.0	0.60	ug/L		07/13/12 14:07	07/13/12 14:07	1
1,1-Dichloroethene	<0.11	U	1.0	0.11	ug/L		07/13/12 14:07	07/13/12 14:07	1
1,1-Dichloroethane	<0.25	U	1.0	0.25	ug/L		07/13/12 14:07	07/13/12 14:07	1
cis-1,2-Dichloroethene	<0.15	U	1.0	0.15	ug/L		07/13/12 14:07	07/13/12 14:07	1
trans-1,2-Dichloroethene	<0.20	U	1.0	0.20	ug/L		07/13/12 14:07	07/13/12 14:07	1
Chloroform	1.2		1.0	0.14	ug/L		07/13/12 14:07	07/13/12 14:07	1
1,2-Dichloroethane	<0.10	U	1.0	0.10	ug/L		07/13/12 14:07	07/13/12 14:07	1
2-Butanone (MEK)	<1.0	U	10	1.0	ug/L		07/13/12 14:07	07/13/12 14:07	1
1,1,1-Trichloroethane	<0.50	U	1.0	0.50	ug/L		07/13/12 14:07	07/13/12 14:07	1
Carbon tetrachloride	<0.50	U	1.0	0.50	ug/L		07/13/12 14:07	07/13/12 14:07	1
Dichlorobromomethane	<0.25	U	1.0	0.25	ug/L		07/13/12 14:07	07/13/12 14:07	1
1,1,2,2-Tetrachloroethane	<0.18	U	1.0	0.18	ug/L		07/13/12 14:07	07/13/12 14:07	1
1,2-Dichloropropane	<0.13	U	1.0	0.13	ug/L		07/13/12 14:07	07/13/12 14:07	1
trans-1,3-Dichloropropene	<0.21	U	1.0	0.21	ug/L		07/13/12 14:07	07/13/12 14:07	1
Trichloroethene	<0.13	U	1.0	0.13	ug/L		07/13/12 14:07	07/13/12 14:07	1
Chlorodibromomethane	<0.10	U	1.0	0.10	ug/L		07/13/12 14:07	07/13/12 14:07	1
1,1,2-Trichloroethane	<0.13	U	1.0	0.13	ug/L		07/13/12 14:07	07/13/12 14:07	1
Benzene	<0.25	U	1.0	0.25	ug/L		07/13/12 14:07	07/13/12 14:07	1
cis-1,3-Dichloropropene	<0.11	U	1.0	0.11	ug/L		07/13/12 14:07	07/13/12 14:07	1

Client Sample Results

Client: Northrop Grumman Corp.

Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Client Sample ID: PERM 7-12

Lab Sample ID: 680-81065-2

Date Collected: 07/11/12 07:45

Matrix: Water

Date Received: 07/12/12 09:36

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	<0.50	U	1.0	0.50	ug/L			07/13/12 14:07	1
2-Hexanone	<1.0	U	10	1.0	ug/L			07/13/12 14:07	1
4-Methyl-2-pentanone (MIBK)	<1.0	U	10	1.0	ug/L			07/13/12 14:07	1
Tetrachloroethene	<0.15	U	1.0	0.15	ug/L			07/13/12 14:07	1
Toluene	<0.33	U	1.0	0.33	ug/L			07/13/12 14:07	1
Chlorobenzene	<0.25	U	1.0	0.25	ug/L			07/13/12 14:07	1
Ethylbenzene	<0.11	U	1.0	0.11	ug/L			07/13/12 14:07	1
Styrene	<0.11	U	1.0	0.11	ug/L			07/13/12 14:07	1
Xylenes, Total	<0.20	U	2.0	0.20	ug/L			07/13/12 14:07	1
Surrogate		%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102			70 - 130				07/13/12 14:07	1
4-Bromofluorobenzene	97			70 - 130				07/13/12 14:07	1
Dibromofluoromethane	100			70 - 130				07/13/12 14:07	1

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	<1.0	U	2.0	1.0	ug/L			07/16/12 14:43	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	<0.78	U	9.4	0.78	ug/L		07/13/12 15:51	07/18/12 13:41	1
Bis(2-chloroethyl)ether	<1.0	U	9.4	1.0	ug/L		07/13/12 15:51	07/18/12 13:41	1
bis(chloroisopropyl) ether	<0.74	U	9.4	0.74	ug/L		07/13/12 15:51	07/18/12 13:41	1
2-Chlorophenol	<0.82	U	9.4	0.82	ug/L		07/13/12 15:51	07/18/12 13:41	1
1,3-Dichlorobenzene	<0.56	U	9.4	0.56	ug/L		07/13/12 15:51	07/18/12 13:41	1
1,4-Dichlorobenzene	<0.51	U	9.4	0.51	ug/L		07/13/12 15:51	07/18/12 13:41	1
1,2-Dichlorobenzene	<0.50	U	9.4	0.50	ug/L		07/13/12 15:51	07/18/12 13:41	1
2-Methylphenol	<0.84	U	9.4	0.84	ug/L		07/13/12 15:51	07/18/12 13:41	1
N-Nitrosodi-n-propylamine	<0.68	U	9.4	0.68	ug/L		07/13/12 15:51	07/18/12 13:41	1
Benzoic acid	<4.7	U	47	4.7	ug/L		07/13/12 15:51	07/18/12 13:41	1
Hexachloroethane	<0.72	U	9.4	0.72	ug/L		07/13/12 15:51	07/18/12 13:41	1
Nitrobenzene	<0.69	U	9.4	0.69	ug/L		07/13/12 15:51	07/18/12 13:41	1
Isophorone	<0.85	U	9.4	0.85	ug/L		07/13/12 15:51	07/18/12 13:41	1
2-Nitrophenol	<0.72	U	9.4	0.72	ug/L		07/13/12 15:51	07/18/12 13:41	1
2,4-Dimethylphenol	<3.8	U	9.4	3.8	ug/L		07/13/12 15:51	07/18/12 13:41	1
Bis(2-chloroethoxy)methane	<0.89	U	9.4	0.89	ug/L		07/13/12 15:51	07/18/12 13:41	1
2,4-Dichlorophenol	<1.0	U	9.4	1.0	ug/L		07/13/12 15:51	07/18/12 13:41	1
Benzyl alcohol	<1.0	U	9.4	1.0	ug/L		07/13/12 15:51	07/18/12 13:41	1
1,2,4-Trichlorobenzene	<0.53	U	9.4	0.53	ug/L		07/13/12 15:51	07/18/12 13:41	1
Naphthalene	<0.66	U	9.4	0.66	ug/L		07/13/12 15:51	07/18/12 13:41	1
4-Chloroaniline	<2.1	U	19	2.1	ug/L		07/13/12 15:51	07/18/12 13:41	1
Hexachlorobutadiene	<0.59	U	9.4	0.59	ug/L		07/13/12 15:51	07/18/12 13:41	1
4-Chloro-3-methylphenol	<0.94	U	9.4	0.94	ug/L		07/13/12 15:51	07/18/12 13:41	1
2-Methylnaphthalene	<0.74	U	9.4	0.74	ug/L		07/13/12 15:51	07/18/12 13:41	1
Hexachlorocyclopentadiene	<2.4	U	9.4	2.4	ug/L		07/13/12 15:51	07/18/12 13:41	1
2,4,6-Trichlorophenol	<0.80	U	9.4	0.80	ug/L		07/13/12 15:51	07/18/12 13:41	1
2,4,5-Trichlorophenol	<1.1	U	9.4	1.1	ug/L		07/13/12 15:51	07/18/12 13:41	1
2-Chloronaphthalene	<0.76	U	9.4	0.76	ug/L		07/13/12 15:51	07/18/12 13:41	1
2-Nitroaniline	<1.2	U	47	1.2	ug/L		07/13/12 15:51	07/18/12 13:41	1
Dimethyl phthalate	<0.93	U	9.4	0.93	ug/L		07/13/12 15:51	07/18/12 13:41	1
Acenaphthylene	<0.80	U	9.4	0.80	ug/L		07/13/12 15:51	07/18/12 13:41	1

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Client Sample ID: PERM 7-12
Date Collected: 07/11/12 07:45
Date Received: 07/12/12 09:36

Lab Sample ID: 680-81065-2
Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3-Nitroaniline	<4.7	U	47	4.7	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Acenaphthene	<0.72	U	9.4	0.72	ug/L	07/13/12 15:51	07/18/12 13:41	1	2
2,4-Dinitrophenol	<9.4	U	47	9.4	ug/L	07/13/12 15:51	07/18/12 13:41	1	3
4-Nitrophenol	<1.8	U	47	1.8	ug/L	07/13/12 15:51	07/18/12 13:41	1	4
Dibenzofuran	<0.75	U	9.4	0.75	ug/L	07/13/12 15:51	07/18/12 13:41	1	5
2,4-Dinitrotoluene	<1.1	U	9.4	1.1	ug/L	07/13/12 15:51	07/18/12 13:41	1	6
2,6-Dinitrotoluene	<1.0	U	9.4	1.0	ug/L	07/13/12 15:51	07/18/12 13:41	1	7
3 & 4 Methylphenol	<1.2	U	9.4	1.2	ug/L	07/13/12 15:51	07/18/12 13:41	1	8
Diethyl phthalate	<0.83	U	9.4	0.83	ug/L	07/13/12 15:51	07/18/12 13:41	1	9
4-Chlorophenyl phenyl ether	<0.79	U	9.4	0.79	ug/L	07/13/12 15:51	07/18/12 13:41	1	10
Fluorene	<0.91	U	9.4	0.91	ug/L	07/13/12 15:51	07/18/12 13:41	1	11
4-Nitroaniline	<4.7	U	47	4.7	ug/L	07/13/12 15:51	07/18/12 13:41	1	12
4,6-Dinitro-2-methylphenol	<9.4	U	47	9.4	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
N-Nitrosodiphenylamine	<0.87	U	9.4	0.87	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
4-Bromophenyl phenyl ether	<0.73	U	9.4	0.73	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Hexachlorobenzene	<0.75	U	9.4	0.75	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Pentachlorophenol	<1.9	U	47	1.9	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Phanthrene	<0.73	U	9.4	0.73	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Anthracene	<0.65	U	9.4	0.65	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Di-n-butyl phthalate	<0.78	U	9.4	0.78	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Fluoranthene	<0.70	U	9.4	0.70	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Pyrene	<0.59	U	9.4	0.59	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Butyl benzyl phthalate	<1.1	U	9.4	1.1	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
3,3'-Dichlorobenzidine	<28	U	57	28	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Benzo[a]anthracene	<0.52	U	9.4	0.52	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Bis(2-ethylhexyl) phthalate	<1.5	U	9.4	1.5	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Chrysene	<0.48	U	9.4	0.48	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
1,4-Dioxane	<3.2	U	9.4	3.2	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Di-n-octyl phthalate	<1.3	U	9.4	1.3	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Benzo[b]fluoranthene	<2.5	U	9.4	2.5	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Benzo[k]fluoranthene	<1.1	U	9.4	1.1	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Benzo[a]pyrene	<0.67	U	9.4	0.67	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Indeno[1,2,3-cd]pyrene	<0.94	U	9.4	0.94	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Dibenz(a,h)anthracene	<0.94	U	9.4	0.94	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Benzof[g,h,i]perylene	<0.82	U	9.4	0.82	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Carbazole	<0.67	U	9.4	0.67	ug/L	07/13/12 15:51	07/18/12 13:41	1	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Phenol-d5	73		25 - 130			07/13/12 15:51	07/18/12 13:41	1	
2-Fluorophenol	75		25 - 130			07/13/12 15:51	07/18/12 13:41	1	
2,4,6-Tribromophenol	81		31 - 141			07/13/12 15:51	07/18/12 13:41	1	
Nitrobenzene-d5	72		39 - 130			07/13/12 15:51	07/18/12 13:41	1	
2-Fluorobiphenyl	74		38 - 130			07/13/12 15:51	07/18/12 13:41	1	
Terphenyl-d14	55		10 - 143			07/13/12 15:51	07/18/12 13:41	1	

Surrogate Summary

Client: Northrop Grumman Corp.
Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		TOL (70-130)	BFB (70-130)	DBFM (70-130)
680-81065-1	A/S 7-12	101	97	103
680-81065-2	PERM 7-12	102	97	100
LCS 680-243207/3	Lab Control Sample	106	100	98
LCSD 680-243207/4	Lab Control Sample Dup	105	97	99
MB 680-243207/5	Method Blank	101	97	102

Surrogate Legend

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene

DBFM = Dibromofluoromethane

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		PHL (25-130)	2FP (25-130)	TBP (31-141)	NBZ (39-130)	FBP (38-130)	TPH (10-143)
680-81065-1	A/S 7-12	79	77	94	79	84	56
680-81065-2	PERM 7-12	73	75	81	72	74	55
LCS 680-243148/21-A	Lab Control Sample	72	75	88	68	72	75
LCSD 680-243148/22-A	Lab Control Sample Dup	74	79	85	69	71	73
MB 680-243148/20-A	Method Blank	74	75	79	73	76	75

Surrogate Legend

PHL = Phenol-d5

2FP = 2-Fluorophenol

TBP = 2,4,6-Tribromophenol

NBZ = Nitrobenzene-d5

FBP = 2-Fluorobiphenyl

TPH = Terphenyl-d14

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-243207/5

Matrix: Water

Analysis Batch: 243207

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloromethane	<0.33	U	1.0	0.33	ug/L			07/13/12 11:33	1
Bromomethane	<0.80	U	1.0	0.80	ug/L			07/13/12 11:33	1
Vinyl chloride	<0.18	U	1.0	0.18	ug/L			07/13/12 11:33	1
Chloroethane	<1.0	U	1.0	1.0	ug/L			07/13/12 11:33	1
Methylene Chloride	<1.0	U	5.0	1.0	ug/L			07/13/12 11:33	1
Acetone	<5.0	U	25	5.0	ug/L			07/13/12 11:33	1
Carbon disulfide	<0.60	U	2.0	0.60	ug/L			07/13/12 11:33	1
1,1-Dichloroethene	<0.11	U	1.0	0.11	ug/L			07/13/12 11:33	1
1,1-Dichloroethane	<0.25	U	1.0	0.25	ug/L			07/13/12 11:33	1
cis-1,2-Dichloroethene	<0.15	U	1.0	0.15	ug/L			07/13/12 11:33	1
trans-1,2-Dichloroethene	<0.20	U	1.0	0.20	ug/L			07/13/12 11:33	1
Chloroform	<0.14	U	1.0	0.14	ug/L			07/13/12 11:33	1
1,2-Dichloroethane	<0.10	U	1.0	0.10	ug/L			07/13/12 11:33	1
2-Butanone (MEK)	<1.0	U	10	1.0	ug/L			07/13/12 11:33	1
1,1,1-Trichloroethane	<0.50	U	1.0	0.50	ug/L			07/13/12 11:33	1
Carbon tetrachloride	<0.50	U	1.0	0.50	ug/L			07/13/12 11:33	1
Dichlorobromomethane	<0.25	U	1.0	0.25	ug/L			07/13/12 11:33	1
1,1,2,2-Tetrachloroethane	<0.18	U	1.0	0.18	ug/L			07/13/12 11:33	1
1,2-Dichloropropane	<0.13	U	1.0	0.13	ug/L			07/13/12 11:33	1
trans-1,3-Dichloropropene	<0.21	U	1.0	0.21	ug/L			07/13/12 11:33	1
Trichloroethene	<0.13	U	1.0	0.13	ug/L			07/13/12 11:33	1
Chlorodibromomethane	<0.10	U	1.0	0.10	ug/L			07/13/12 11:33	1
1,1,2-Trichloroethane	<0.13	U	1.0	0.13	ug/L			07/13/12 11:33	1
Benzene	<0.25	U	1.0	0.25	ug/L			07/13/12 11:33	1
cis-1,3-Dichloropropene	<0.11	U	1.0	0.11	ug/L			07/13/12 11:33	1
Bromoform	<0.50	U	1.0	0.50	ug/L			07/13/12 11:33	1
2-Hexanone	<1.0	U	10	1.0	ug/L			07/13/12 11:33	1
4-Methyl-2-pentanone (MIBK)	<1.0	U	10	1.0	ug/L			07/13/12 11:33	1
Tetrachloroethene	<0.15	U	1.0	0.15	ug/L			07/13/12 11:33	1
Toluene	<0.33	U	1.0	0.33	ug/L			07/13/12 11:33	1
Chlorobenzene	<0.25	U	1.0	0.25	ug/L			07/13/12 11:33	1
Ethylbenzene	<0.11	U	1.0	0.11	ug/L			07/13/12 11:33	1
Styrene	<0.11	U	1.0	0.11	ug/L			07/13/12 11:33	1
Xylenes, Total	<0.20	U	2.0	0.20	ug/L			07/13/12 11:33	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130		07/13/12 11:33	1
4-Bromofluorobenzene	97		70 - 130		07/13/12 11:33	1
Dibromofluoromethane	102		70 - 130		07/13/12 11:33	1

Lab Sample ID: LCS 680-243207/3

Matrix: Water

Analysis Batch: 243207

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS		Unit	D	%Rec	Limits
	Added	Result	Qualifier				
Chloromethane	50.0	45.0		ug/L	90	70 - 130	
Bromomethane	50.0	70.1		ug/L	140	23 - 165	
Vinyl chloride	50.0	39.2		ug/L	78	67 - 134	
Chloroethane	50.0	52.1		ug/L	104	56 - 152	

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-243207/3

Matrix: Water

Analysis Batch: 243207

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec.
		Result	Qualifier				
Methylene Chloride	50.0	46.4		ug/L		93	67 - 130
Acetone	100	88.9		ug/L		89	26 - 180
Carbon disulfide	50.0	45.3		ug/L		91	54 - 132
1,1-Dichloroethene	50.0	43.6		ug/L		87	66 - 131
1,1-Dichloroethane	50.0	47.1		ug/L		94	70 - 130
cis-1,2-Dichloroethene	50.0	45.6		ug/L		91	70 - 130
trans-1,2-Dichloroethene	50.0	45.1		ug/L		90	70 - 130
Chloroform	50.0	48.7		ug/L		97	70 - 130
1,2-Dichloroethane	50.0	51.2		ug/L		102	70 - 130
2-Butanone (MEK)	100	100		ug/L		100	49 - 172
1,1,1-Trichloroethane	50.0	52.9		ug/L		106	70 - 130
Carbon tetrachloride	50.0	54.7		ug/L		109	70 - 130
Dichlorobromomethane	50.0	51.5		ug/L		103	70 - 130
1,1,2,2-Tetrachloroethane	50.0	49.7		ug/L		99	70 - 130
1,2-Dichloropropane	50.0	49.8		ug/L		100	70 - 130
trans-1,3-Dichloropropene	50.0	51.3		ug/L		103	70 - 130
Trichloroethene	50.0	50.6		ug/L		101	70 - 130
Chlorodibromomethane	50.0	51.3		ug/L		103	70 - 130
1,1,2-Trichloroethane	50.0	53.8		ug/L		108	70 - 130
Benzene	50.0	46.2		ug/L		92	70 - 130
cis-1,3-Dichloropropene	50.0	49.7		ug/L		99	70 - 130
Bromoform	50.0	52.8		ug/L		106	70 - 130
2-Hexanone	100	85.4		ug/L		85	42 - 185
4-Methyl-2-pentanone (MIBK)	100	106		ug/L		106	70 - 130
Tetrachloroethene	50.0	49.3		ug/L		99	70 - 130
Toluene	50.0	50.8		ug/L		102	70 - 130
Chlorobenzene	50.0	47.9		ug/L		96	70 - 130
Ethylbenzene	50.0	49.2		ug/L		98	70 - 130
Styrene	50.0	50.7		ug/L		101	70 - 130
Xylenes, Total	150	147		ug/L		98	70 - 130

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	106		70 - 130
4-Bromofluorobenzene	100		70 - 130
Dibromofluoromethane	98		70 - 130

Lab Sample ID: LCSD 680-243207/4

Matrix: Water

Analysis Batch: 243207

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD		Unit	D	%Rec	%Rec.	RPD	RPD	Limit
		Result	Qualifier							
Chloromethane	50.0	43.8		ug/L		88	70 - 130	3	30	
Bromomethane	50.0	69.2		ug/L		138	23 - 165	1	50	
Vinyl chloride	50.0	38.8		ug/L		78	67 - 134	1	30	
Chloroethane	50.0	46.0		ug/L		92	56 - 152	12	40	
Methylene Chloride	50.0	45.3		ug/L		91	67 - 130	2	30	
Acetone	100	88.0		ug/L		88	26 - 180	1	50	
Carbon disulfide	50.0	43.8		ug/L		88	54 - 132	3	30	
1,1-Dichloroethene	50.0	42.9		ug/L		86	66 - 131	2	30	

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-243207/4

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Matrix: Water

Analysis Batch: 243207

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	Limits	RPD	RPD	Limit
	Added	Result	Qualifier							
1,1-Dichloroethane	50.0	46.9		ug/L		94	70 - 130	1		30
cis-1,2-Dichloroethene	50.0	44.3		ug/L		89	70 - 130	3		30
trans-1,2-Dichloroethene	50.0	44.9		ug/L		90	70 - 130	0		30
Chloroform	50.0	48.3		ug/L		97	70 - 130	1		30
1,2-Dichloroethane	50.0	50.6		ug/L		101	70 - 130	1		30
2-Butanone (MEK)	100	99.0		ug/L		99	49 - 172	1		30
1,1,1-Trichloroethane	50.0	51.4		ug/L		103	70 - 130	3		30
Carbon tetrachloride	50.0	53.7		ug/L		107	70 - 130	2		30
Dichlorobromomethane	50.0	50.6		ug/L		101	70 - 130	2		30
1,1,2,2-Tetrachloroethane	50.0	49.2		ug/L		98	70 - 130	1		30
1,2-Dichloropropane	50.0	49.5		ug/L		99	70 - 130	1		30
trans-1,3-Dichloropropene	50.0	50.8		ug/L		102	70 - 130	1		50
Trichloroethene	50.0	48.8		ug/L		98	70 - 130	4		30
Chlorodibromomethane	50.0	50.2		ug/L		100	70 - 130	2		50
1,1,2-Trichloroethane	50.0	53.1		ug/L		106	70 - 130	1		30
Benzene	50.0	45.6		ug/L		91	70 - 130	1		30
cis-1,3-Dichloropropene	50.0	49.8		ug/L		100	70 - 130	0		30
Bromoform	50.0	50.9		ug/L		102	70 - 130	4		30
2-Hexanone	100	85.0		ug/L		85	42 - 185	0		30
4-Methyl-2-pentanone (MIBK)	100	105		ug/L		105	70 - 130	2		30
Tetrachloroethene	50.0	46.7		ug/L		93	70 - 130	5		30
Toluene	50.0	50.7		ug/L		101	70 - 130	0		30
Chlorobenzene	50.0	46.7		ug/L		93	70 - 130	3		30
Ethylbenzene	50.0	47.6		ug/L		95	70 - 130	3		30
Styrene	50.0	49.1		ug/L		98	70 - 130	3		30
Xylenes, Total	150	142		ug/L		95	70 - 130	3		30

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	105		70 - 130
4-Bromofluorobenzene	97		70 - 130
Dibromofluoromethane	99		70 - 130

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 660-126688/6

Client Sample ID: Method Blank
Prep Type: Total/NA

Matrix: Water

Analysis Batch: 126688

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	<1.0	U	2.0	1.0	ug/L			07/16/12 10:09	1

Lab Sample ID: LCS 660-126688/3

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Matrix: Water

Analysis Batch: 126688

Analyte	Spike	LCS	LCS	Unit	D	%Rec	Limits
	Added	Result	Qualifier				
1,4-Dioxane	25.0	24.1		ug/L		96	50 - 150

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Method: 8260C SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 660-126688/4

Matrix: Water

Analysis Batch: 126688

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec.	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	25.0	30.6		ug/L	122		50 - 150	24	50

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-243148/20-A

Matrix: Water

Analysis Batch: 243742

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 243148

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	<0.83	U	10	0.83	ug/L		07/13/12 15:51	07/18/12 12:43	1
Bis(2-chloroethyl)ether	<1.1	U	10	1.1	ug/L		07/13/12 15:51	07/18/12 12:43	1
bis(chloroisopropyl) ether	<0.78	U	10	0.78	ug/L		07/13/12 15:51	07/18/12 12:43	1
2-Chlorophenol	<0.87	U	10	0.87	ug/L		07/13/12 15:51	07/18/12 12:43	1
1,3-Dichlorobenzene	<0.59	U	10	0.59	ug/L		07/13/12 15:51	07/18/12 12:43	1
1,4-Dichlorobenzene	<0.54	U	10	0.54	ug/L		07/13/12 15:51	07/18/12 12:43	1
1,2-Dichlorobenzene	<0.53	U	10	0.53	ug/L		07/13/12 15:51	07/18/12 12:43	1
2-Methylphenol	<0.89	U	10	0.89	ug/L		07/13/12 15:51	07/18/12 12:43	1
N-Nitrosodi-n-propylamine	<0.72	U	10	0.72	ug/L		07/13/12 15:51	07/18/12 12:43	1
Benzoic acid	<5.0	U	50	5.0	ug/L		07/13/12 15:51	07/18/12 12:43	1
Hexachloroethane	<0.76	U	10	0.76	ug/L		07/13/12 15:51	07/18/12 12:43	1
Nitrobenzene	<0.73	U	10	0.73	ug/L		07/13/12 15:51	07/18/12 12:43	1
Isophorone	<0.90	U	10	0.90	ug/L		07/13/12 15:51	07/18/12 12:43	1
2-Nitrophenol	<0.76	U	10	0.76	ug/L		07/13/12 15:51	07/18/12 12:43	1
2,4-Dimethylphenol	<4.0	U	10	4.0	ug/L		07/13/12 15:51	07/18/12 12:43	1
Bis(2-chloroethoxy)methane	<0.94	U	10	0.94	ug/L		07/13/12 15:51	07/18/12 12:43	1
2,4-Dichlorophenol	<1.1	U	10	1.1	ug/L		07/13/12 15:51	07/18/12 12:43	1
Benzyl alcohol	<1.1	U	10	1.1	ug/L		07/13/12 15:51	07/18/12 12:43	1
1,2,4-Trichlorobenzene	<0.56	U	10	0.56	ug/L		07/13/12 15:51	07/18/12 12:43	1
Naphthalene	<0.70	U	10	0.70	ug/L		07/13/12 15:51	07/18/12 12:43	1
4-Chloroaniline	<2.2	U	20	2.2	ug/L		07/13/12 15:51	07/18/12 12:43	1
Hexachlorobutadiene	<0.62	U	10	0.62	ug/L		07/13/12 15:51	07/18/12 12:43	1
4-Chloro-3-methylphenol	<1.0	U	10	1.0	ug/L		07/13/12 15:51	07/18/12 12:43	1
2-Methylnaphthalene	<0.78	U	10	0.78	ug/L		07/13/12 15:51	07/18/12 12:43	1
Hexachlorocyclopentadiene	<2.5	U	10	2.5	ug/L		07/13/12 15:51	07/18/12 12:43	1
2,4,6-Trichlorophenol	<0.85	U	10	0.85	ug/L		07/13/12 15:51	07/18/12 12:43	1
2,4,5-Trichlorophenol	<1.2	U	10	1.2	ug/L		07/13/12 15:51	07/18/12 12:43	1
2-Chloronaphthalene	<0.80	U	10	0.80	ug/L		07/13/12 15:51	07/18/12 12:43	1
2-Nitroaniline	<1.3	U	50	1.3	ug/L		07/13/12 15:51	07/18/12 12:43	1
Dimethyl phthalate	<0.99	U	10	0.99	ug/L		07/13/12 15:51	07/18/12 12:43	1
Acenaphthylene	<0.85	U	10	0.85	ug/L		07/13/12 15:51	07/18/12 12:43	1
3-Nitroaniline	<5.0	U	50	5.0	ug/L		07/13/12 15:51	07/18/12 12:43	1
Acenaphthene	<0.76	U	10	0.76	ug/L		07/13/12 15:51	07/18/12 12:43	1
2,4-Dinitrophenol	<10	U	50	10	ug/L		07/13/12 15:51	07/18/12 12:43	1
4-Nitrophenol	<1.9	U	50	1.9	ug/L		07/13/12 15:51	07/18/12 12:43	1
Dibenzofuran	<0.79	U	10	0.79	ug/L		07/13/12 15:51	07/18/12 12:43	1
2,4-Dinitrotoluene	<1.2	U	10	1.2	ug/L		07/13/12 15:51	07/18/12 12:43	1
2,6-Dinitrotoluene	<1.1	U	10	1.1	ug/L		07/13/12 15:51	07/18/12 12:43	1
3 & 4 Methylphenol	<1.3	U	10	1.3	ug/L		07/13/12 15:51	07/18/12 12:43	1
Diethyl phthalate	<0.88	U	10	0.88	ug/L		07/13/12 15:51	07/18/12 12:43	1

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-243148/20-A

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 243742

Prep Batch: 243148

Analyte	MB		RL	MDL	Unit	D	Prepared		Analyzed	Dil Fac
	Result	Qualifier					Prepared	Analyzed		
4-Chlorophenyl phenyl ether	<0.84	U	10	0.84	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Fluorene	<0.96	U	10	0.96	ug/L	07/13/12 15:51	07/18/12 12:43		1	
4-Nitroaniline	<5.0	U	50	5.0	ug/L	07/13/12 15:51	07/18/12 12:43		1	
4,6-Dinitro-2-methylphenol	<10	U	50	10	ug/L	07/13/12 15:51	07/18/12 12:43		1	
N-Nitrosodiphenylamine	<0.92	U	10	0.92	ug/L	07/13/12 15:51	07/18/12 12:43		1	
4-Bromophenyl phenyl ether	<0.77	U	10	0.77	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Hexachlorobenzene	<0.79	U	10	0.79	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Pentachlorophenol	<2.0	U	50	2.0	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Phenanthrene	<0.77	U	10	0.77	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Anthracene	<0.69	U	10	0.69	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Di-n-butyl phthalate	<0.83	U	10	0.83	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Fluoranthene	<0.74	U	10	0.74	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Pyrene	<0.63	U	10	0.63	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Butyl benzyl phthalate	<1.2	U	10	1.2	ug/L	07/13/12 15:51	07/18/12 12:43		1	
3,3'-Dichlorobenzidine	<30	U	60	30	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Benzo[a]anthracene	<0.55	U	10	0.55	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Bis(2-ethylhexyl) phthalate	<1.6	U	10	1.6	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Chrysene	<0.51	U	10	0.51	ug/L	07/13/12 15:51	07/18/12 12:43		1	
1,4-Dioxane	<3.4	U	10	3.4	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Di-n-octyl phthalate	<1.4	U	10	1.4	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Benzo[b]fluoranthene	<2.6	U	10	2.6	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Benzo[k]fluoranthene	<1.2	U	10	1.2	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Benzo[a]pyrene	<0.71	U	10	0.71	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Indeno[1,2,3-cd]pyrene	<1.0	U	10	1.0	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Dibenz(a,h)anthracene	<1.0	U	10	1.0	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Benzo[g,h,i]perylene	<0.87	U	10	0.87	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Carbazole	<0.71	U	10	0.71	ug/L	07/13/12 15:51	07/18/12 12:43		1	
Surrogate	MB		Limits	Prepared	Analyzed	Dil Fac				
	%Recovery	Qualifier								
Phenol-d5	74		25 - 130	07/13/12 15:51	07/18/12 12:43	1				
2-Fluorophenol	75		25 - 130	07/13/12 15:51	07/18/12 12:43	1				
2,4,6-Tribromophenol	79		31 - 141	07/13/12 15:51	07/18/12 12:43	1				
Nitrobenzene-d5	73		39 - 130	07/13/12 15:51	07/18/12 12:43	1				
2-Fluorobiphenyl	76		38 - 130	07/13/12 15:51	07/18/12 12:43	1				
Terphenyl-d14	75		10 - 143	07/13/12 15:51	07/18/12 12:43	1				

Lab Sample ID: LCS 680-243148/21-A

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 243742

Prep Batch: 243148

Analyte	Spike Added	LCS			Unit	D	%Rec	%Rec.	
		Result	Qualifier	Limits				Prepared	Analyzed
Phenol	100	69.2		ug/L	69		29 - 130		
Bis(2-chloroethyl)ether	100	75.1		ug/L	75		56 - 130		
bis(chloroisopropyl) ether	100	79.8		ug/L	80		55 - 130		
2-Chlorophenol	100	78.8		ug/L	79		57 - 130		
1,3-Dichlorobenzene	100	69.1		ug/L	69		41 - 130		
1,4-Dichlorobenzene	100	68.5		ug/L	69		43 - 130		
1,2-Dichlorobenzene	100	69.8		ug/L	70		43 - 130		
2-Methylphenol	100	78.4		ug/L	78		55 - 130		

QC Sample Results

Client: Northrop Grumman Corp.

Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-243148/21-A

Matrix: Water

Analysis Batch: 243742

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 243148

Analyte	Spike Added	LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
N-Nitrosodi-n-propylamine	100	64.0		ug/L	64	64 - 130	
Benzoic acid	100	36.1	I	ug/L	36	10 - 130	
Hexachloroethane	100	63.5		ug/L	63	39 - 130	
Nitrobenzene	100	69.7		ug/L	70	56 - 130	
Isophorone	100	77.3		ug/L	77	59 - 130	
2-Nitrophenol	100	77.6		ug/L	78	54 - 130	
2,4-Dimethylphenol	100	64.9		ug/L	65	40 - 130	
Bis(2-chloroethoxy)methane	100	83.7		ug/L	84	64 - 130	
2,4-Dichlorophenol	100	74.1		ug/L	74	54 - 130	
Benzyl alcohol	100	66.9		ug/L	67	53 - 130	
1,2,4-Trichlorobenzene	100	62.9		ug/L	63	42 - 130	
Naphthalene	100	73.8		ug/L	74	50 - 130	
4-Chloroaniline	100	46.4		ug/L	46	42 - 130	
Hexachlorobutadiene	100	63.7		ug/L	64	36 - 130	
4-Chloro-3-methylphenol	100	73.9		ug/L	74	60 - 130	
2-Methylnaphthalene	100	74.4		ug/L	74	52 - 130	
Hexachlorocyclopentadiene	100	27.2		ug/L	27	10 - 130	
2,4,6-Trichlorophenol	100	76.0		ug/L	76	57 - 130	
2,4,5-Trichlorophenol	100	76.1		ug/L	76	61 - 130	
2-Chloronaphthalene	100	73.8		ug/L	74	53 - 130	
2-Nitroaniline	100	86.8		ug/L	87	60 - 130	
Dimethyl phthalate	100	82.2		ug/L	82	69 - 130	
Acenaphthylene	100	85.4		ug/L	85	60 - 130	
3-Nitroaniline	100	78.8		ug/L	79	54 - 130	
Acenaphthene	100	79.7		ug/L	80	55 - 130	
2,4-Dinitrophenol	100	78.8		ug/L	79	20 - 165	
4-Nitrophenol	100	74.7		ug/L	75	38 - 130	
Dibenzofuran	100	76.8		ug/L	77	58 - 130	
2,4-Dinitrotoluene	100	84.2		ug/L	84	63 - 130	
2,6-Dinitrotoluene	100	84.0		ug/L	84	65 - 130	
3 & 4 Methylphenol	100	74.3		ug/L	74	35 - 130	
Diethyl phthalate	100	83.8		ug/L	84	70 - 130	
4-Chlorophenyl phenyl ether	100	74.4		ug/L	74	57 - 130	
Fluorene	100	78.6		ug/L	79	61 - 130	
4-Nitroaniline	100	82.8		ug/L	83	54 - 130	
4,6-Dinitro-2-methylphenol	100	82.3		ug/L	82	45 - 134	
N-Nitrosodiphenylamine	100	80.3		ug/L	80	68 - 130	
4-Bromophenyl phenyl ether	100	79.5		ug/L	79	61 - 130	
Hexachlorobenzene	100	77.2		ug/L	77	52 - 130	
Pentachlorophenol	100	77.1		ug/L	77	42 - 138	
Phenanthrrene	100	78.6		ug/L	79	62 - 130	
Anthracene	100	74.8		ug/L	75	61 - 130	
Di-n-butyl phthalate	100	78.8		ug/L	79	66 - 130	
Fluoranthene	100	73.5		ug/L	73	56 - 130	
Pyrene	100	80.5		ug/L	80	60 - 130	
Butyl benzyl phthalate	100	87.5		ug/L	87	66 - 130	
3,3'-Dichlorobenzidine	100	44.4	I	ug/L	44	27 - 130	
Benzo[a]anthracene	100	75.3		ug/L	75	58 - 130	
Bis(2-ethylhexyl) phthalate	100	78.8		ug/L	79	62 - 130	
Chrysene	100	77.5		ug/L	78	59 - 130	

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-243148/21-A

Matrix: Water

Analysis Batch: 243742

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 243148

Analyte	Spike Added	LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
1,4-Dioxane	100	56.7		ug/L		57	35 - 130
Di-n-octyl phthalate	100	87.9		ug/L		88	64 - 130
Benzo[b]fluoranthene	100	83.8		ug/L		84	51 - 130
Benzo[k]fluoranthene	100	72.9		ug/L		73	53 - 130
Benzo[a]pyrene	100	83.6		ug/L		84	61 - 130
Indeno[1,2,3-cd]pyrene	100	80.6		ug/L		81	47 - 130
Dibenz(a,h)anthracene	100	73.7		ug/L		74	55 - 130
Benzo[g,h,i]perylene	100	74.4		ug/L		74	54 - 130
Carbazole	100	85.2		ug/L		85	67 - 130

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Phenol-d5	72		25 - 130
2-Fluorophenol	75		25 - 130
2,4,6-Tribromophenol	88		31 - 141
Nitrobenzene-d5	68		39 - 130
2-Fluorobiphenyl	72		38 - 130
Terphenyl-d14	75		10 - 143

Lab Sample ID: LCSD 680-243148/22-A

Matrix: Water

Analysis Batch: 243742

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 243148

Analyte	Spike Added	LCSD		Unit	D	%Rec	Limits	RPD	Limit
		Result	Qualifier						
Phenol	100	67.0		ug/L		67	29 - 130	3	50
Bis(2-chloroethyl)ether	100	74.3		ug/L		74	56 - 130	1	50
bis(chloroisopropyl) ether	100	79.1		ug/L		79	55 - 130	1	50
2-Chlorophenol	100	77.7		ug/L		78	57 - 130	1	50
1,3-Dichlorobenzene	100	68.4		ug/L		68	41 - 130	1	50
1,4-Dichlorobenzene	100	67.5		ug/L		67	43 - 130	2	50
1,2-Dichlorobenzene	100	68.7		ug/L		69	43 - 130	1	50
2-Methylphenol	100	76.5		ug/L		77	55 - 130	2	50
N-Nitrosodi-n-propylamine	100	67.1		ug/L		67	64 - 130	5	50
Benzoic acid	100	33.3	I	ug/L		33	10 - 130	8	50
Hexachloroethane	100	62.4		ug/L		62	39 - 130	2	50
Nitrobenzene	100	68.1		ug/L		68	56 - 130	2	50
Isophorone	100	72.4		ug/L		72	59 - 130	7	50
2-Nitrophenol	100	75.8		ug/L		76	54 - 130	2	50
2,4-Dimethylphenol	100	63.6		ug/L		64	40 - 130	2	50
Bis(2-chloroethoxy)methane	100	81.1		ug/L		81	64 - 130	3	50
2,4-Dichlorophenol	100	70.5		ug/L		71	54 - 130	5	50
Benzyl alcohol	100	64.4		ug/L		64	53 - 130	4	50
1,2,4-Trichlorobenzene	100	60.7		ug/L		61	42 - 130	4	50
Naphthalene	100	71.3		ug/L		71	50 - 130	3	50
4-Chloroaniline	100	54.4		ug/L		54	42 - 130	16	50
Hexachlorobutadiene	100	62.1		ug/L		62	36 - 130	3	50
4-Chloro-3-methylphenol	100	69.3		ug/L		69	60 - 130	6	50
2-Methylnaphthalene	100	70.9		ug/L		71	52 - 130	5	50
Hexachlorocyclopentadiene	100	27.2		ug/L		27	10 - 130	0	50
2,4,6-Trichlorophenol	100	71.7		ug/L		72	57 - 130	6	50

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-243148/22-A

Matrix: Water

Analysis Batch: 243742

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 243148

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	Limits	RPD	RPD	Limit
	Added	Result	Qualifier							
2,4,5-Trichlorophenol	100	70.7		ug/L		71	61 - 130	7	50	
2-Chloronaphthalene	100	70.1		ug/L		70	53 - 130	5	50	
2-Nitroaniline	100	78.7		ug/L		79	60 - 130	10	50	
Dimethyl phthalate	100	75.4		ug/L		75	69 - 130	9	50	
Acenaphthylene	100	80.1		ug/L		80	60 - 130	6	50	
3-Nitroaniline	100	71.6		ug/L		72	54 - 130	10	50	
Acenaphthene	100	74.4		ug/L		74	55 - 130	7	50	
2,4-Dinitrophenol	100	70.8		ug/L		71	20 - 165	11	50	
4-Nitrophenol	100	67.3		ug/L		67	38 - 130	10	50	
Dibenzofuran	100	71.7		ug/L		72	58 - 130	7	50	
2,4-Dinitrotoluene	100	76.8		ug/L		77	63 - 130	9	50	
2,6-Dinitrotoluene	100	78.2		ug/L		78	65 - 130	7	50	
3 & 4 Methylphenol	100	71.4		ug/L		71	35 - 130	4	50	
Diethyl phthalate	100	76.4		ug/L		76	70 - 130	9	50	
4-Chlorophenyl phenyl ether	100	68.7		ug/L		69	57 - 130	8	50	
Fluorene	100	73.5		ug/L		73	61 - 130	7	50	
4-Nitroaniline	100	74.8		ug/L		75	54 - 130	10	50	
4,6-Dinitro-2-methylphenol	100	75.7		ug/L		76	45 - 134	8	50	
N-Nitrosodiphenylamine	100	74.5		ug/L		75	68 - 130	7	50	
4-Bromophenyl phenyl ether	100	73.1		ug/L		73	61 - 130	8	50	
Hexachlorobenzene	100	70.8		ug/L		71	52 - 130	9	50	
Pentachlorophenol	100	71.0		ug/L		71	42 - 138	8	50	
Phenanthrene	100	72.2		ug/L		72	62 - 130	9	50	
Anthracene	100	68.8		ug/L		69	61 - 130	8	50	
Di-n-butyl phthalate	100	72.6		ug/L		73	66 - 130	8	50	
Fluoranthene	100	67.1		ug/L		67	56 - 130	9	50	
Pyrene	100	74.5		ug/L		74	60 - 130	8	50	
Butyl benzyl phthalate	100	80.4		ug/L		80	66 - 130	8	50	
3,3'-Dichlorobenzidine	100	39.2	I	ug/L		39	27 - 130	12	50	
Benzo[a]anthracene	100	69.4		ug/L		69	58 - 130	8	50	
Bis(2-ethylhexyl) phthalate	100	72.5		ug/L		73	62 - 130	8	50	
Chrysene	100	70.4		ug/L		70	59 - 130	10	50	
1,4-Dioxane	100	55.2		ug/L		55	35 - 130	3	50	
Di-n-octyl phthalate	100	80.1		ug/L		80	64 - 130	9	50	
Benzo[b]fluoranthene	100	68.7		ug/L		69	51 - 130	20	50	
Benzo[k]fluoranthene	100	68.2		ug/L		68	53 - 130	7	50	
Benzo[a]pyrene	100	76.6		ug/L		77	61 - 130	9	50	
Indeno[1,2,3-cd]pyrene	100	69.0		ug/L		69	47 - 130	16	50	
Dibenz(a,h)anthracene	100	66.0		ug/L		66	55 - 130	11	50	
Benzo[g,h,i]perylene	100	65.6		ug/L		66	54 - 130	12	50	
Carbazole	100	78.3		ug/L		78	67 - 130	8	50	

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
Phenol-d5	74		25 - 130
2-Fluorophenol	79		25 - 130
2,4,6-Tribromophenol	85		31 - 141
Nitrobenzene-d5	69		39 - 130
2-Fluorobiphenyl	71		38 - 130
Terphenyl-d4	73		10 - 143

Lab Chronicle

Client: Northrop Grumman Corp.

Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Client Sample ID: A/S 7-12

Date Collected: 07/11/12 07:30

Date Received: 07/12/12 09:36

Lab Sample ID: 680-81065-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	5 mL	5 mL	126688	07/16/12 14:25	EC	TAL TAM
Total/NA	Analysis	8260B		1	5 mL	5 mL	243207	07/13/12 13:39	JD	TAL SAV
Total/NA	Prep	3520C			1056.8 mL	1 mL	243148	07/13/12 15:51	RBS	TAL SAV
Total/NA	Analysis	8270C		1			243742	07/18/12 13:12	BB	TAL SAV

Client Sample ID: PERM 7-12

Date Collected: 07/11/12 07:45

Date Received: 07/12/12 09:36

Lab Sample ID: 680-81065-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	5 mL	5 mL	126688	07/16/12 14:43	EC	TAL TAM
Total/NA	Analysis	8260B		1	5 mL	5 mL	243207	07/13/12 14:07	JD	TAL SAV
Total/NA	Prep	3520C			1059.1 mL	1 mL	243148	07/13/12 15:51	RBS	TAL SAV
Total/NA	Analysis	8270C		1			243742	07/18/12 13:41	BB	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

Serial Number

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE <i>WCP 7-12</i>	PROJECT NO.	PROJECT LOCATION (STATE)	MATRIX TYPE	REQUIRED ANALYSIS					PAGE <i>1</i> OF <i>1</i>
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.							STANDARD REPORT DELIVERY <input checked="" type="checkbox"/>
CLIENT (SIE) PM <i>R. Dorian</i>	CLIENT PHONE	CLIENT FAX							DATE DUE _____
CLIENT NAME <i>Northrop Grumman</i>	CLIENT E-MAIL								EXPEDITED REPORT DELIVERY (SURCHARGE) <input type="checkbox"/>
CLIENT ADDRESS <i>5000 US 1 North St. Augustine, FL</i>									DATE DUE _____
COMPANY CONTRACTING THIS WORK (if applicable)									
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:									

SAMPLE		SAMPLE IDENTIFICATION			NUMBER OF CONTAINERS SUBMITTED					REMARKS	
DATE	TIME	* A/S 7-12			1X	AIR	NON-AEROSOL (DUST/OIL/SUSPENDED)	AEROSOLS (WATER)	SOLID OR SEMI-SOLID	COMPOSITION (OR GRAB) (ND/CAE)	
7-11-12	0730	* A/S 7-12			1X					2 3 3	
7-11-12	0745	PEAK 7-12			6X					2 3 3	
* A/S 7-12 IS A COMPOSITE Rw4 = 18.70 Rw6 = 8.212											

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
<i>John Druffel</i>	7-11-12	12:45PM						

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
<i>John Druffel</i>	7-11-12	12:45PM						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES <input type="radio"/> NO <input checked="" type="radio"/>	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
<i>John Druffel</i>	7-11-12	0456	NO <input checked="" type="radio"/>		680-3865	3.6 L

TAT 8240 08/11/2012

Certification Summary

Client: Northrop Grumman Corp.

Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Savannah	A2LA	DoD ELAP		0399-01
TestAmerica Savannah	A2LA	ISO/IEC 17025		399.01
TestAmerica Savannah	Alabama	State Program	4	41450
TestAmerica Savannah	Alaska (UST)	State Program	10	UST-104
TestAmerica Savannah	Arkansas DEQ	State Program	6	88-0692
TestAmerica Savannah	California	NELAC	9	3217CA
TestAmerica Savannah	Colorado	State Program	8	N/A
TestAmerica Savannah	Connecticut	State Program	1	PH-0161
TestAmerica Savannah	Florida	NELAC	4	E87052
TestAmerica Savannah	GA Dept. of Agriculture	State Program	4	N/A
TestAmerica Savannah	Georgia	State Program	4	803
TestAmerica Savannah	Georgia	State Program	4	N/A
TestAmerica Savannah	Guam	State Program	9	09-005r
TestAmerica Savannah	Hawaii	State Program	9	N/A
TestAmerica Savannah	Illinois	NELAC	5	200022
TestAmerica Savannah	Indiana	State Program	5	N/A
TestAmerica Savannah	Iowa	State Program	7	353
TestAmerica Savannah	Kentucky	State Program	4	90084
TestAmerica Savannah	Kentucky (UST)	State Program	4	18
TestAmerica Savannah	Louisiana	NELAC	6	30690
TestAmerica Savannah	Louisiana	NELAC	6	LA100015
TestAmerica Savannah	Maine	State Program	1	GA00006
TestAmerica Savannah	Maryland	State Program	3	250
TestAmerica Savannah	Massachusetts	State Program	1	M-GA006
TestAmerica Savannah	Michigan	State Program	5	9925
TestAmerica Savannah	Mississippi	State Program	4	N/A
TestAmerica Savannah	Montana	State Program	8	CERT0081
TestAmerica Savannah	Nebraska	State Program	7	TestAmerica-Savannah
TestAmerica Savannah	New Jersey	NELAC	2	GA769
TestAmerica Savannah	New Mexico	State Program	6	N/A
TestAmerica Savannah	New York	NELAC	2	10842
TestAmerica Savannah	North Carolina DENR	State Program	4	269
TestAmerica Savannah	North Carolina DHHS	State Program	4	13701
TestAmerica Savannah	Oklahoma	State Program	6	9984
TestAmerica Savannah	Pennsylvania	NELAC	3	68-00474
TestAmerica Savannah	Puerto Rico	State Program	2	GA00006
TestAmerica Savannah	Rhode Island	State Program	1	LAO00244
TestAmerica Savannah	South Carolina	State Program	4	98001
TestAmerica Savannah	Tennessee	State Program	4	TN02961
TestAmerica Savannah	Texas	NELAC	6	T104704185-08-TX
TestAmerica Savannah	USDA	Federal		SAV 3-04
TestAmerica Savannah	Vermont	State Program	1	87052
TestAmerica Savannah	Virginia	NELAC	3	460161
TestAmerica Savannah	Washington	State Program	10	C1794
TestAmerica Savannah	West Virginia	State Program	3	9950C
TestAmerica Savannah	West Virginia DEP	State Program	3	94
TestAmerica Savannah	Wisconsin	State Program	5	999819810
TestAmerica Savannah	Wyoming	State Program	8	8TMS-Q
TestAmerica Tampa	Alabama	State Program	4	40610
TestAmerica Tampa	Florida	NELAC	4	E84282
TestAmerica Tampa	Georgia	State Program	4	905
TestAmerica Tampa	USDA	Federal		P330-11-00177

Certification Summary

Client: Northrop Grumman Corp.

Project/Site: WCP 7-12

TestAmerica Job ID: 680-81065-1

Laboratory	Authority	Program	EPA Region	Certification ID
------------	-----------	---------	------------	------------------

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

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APPENDIX C

MONITOR WELL LABORATORY ANALYTICAL DATA

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Tallahassee

2846 Industrial Plaza Drive

Tallahassee, FL 32301

Tel: (850)878-3994

TestAmerica Job ID: 640-39444-1

Client Project/Site: NG - St. Augustine

For:

Northrop Grumman Corp.

Integrated Systems

5000 U.S.#1 North

St. Augustine, Florida 32095

Attn: Mr. Rick Doria



Authorized for release by:

7/26/2012 10:41:29 AM

Todd Baumgartner

Project Manager II

todd.baumgartner@testamericainc.com

Designee for

Chad Bechtold

Project Manager II

chad.bechtold@testamericainc.com

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	5
Client Sample Results	6
Surrogate Summary	15
QC Sample Results	16
QC Association Summary	20
Lab Chronicle	21
Certification Summary	23
Method Summary	24
Sample Summary	25
Chain of Custody	26
Receipt Checklists	27

Definitions/Glossary

Client: Northrop Grumman Corp.

Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
J	Estimated value; value may not be accurate.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

Glossary

Abbreviation These commonly used abbreviations may or may not be present in this report.

☒	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Northrop Grumman Corp.

Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Job ID: 640-39444-1

Laboratory: TestAmerica Tallahassee

Narrative

Job Narrative 640-39444-1

Comments

No additional comments.

Receipt

The samples were received on 7/13/2012 9:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.4° C.

GC/MS VOA

Method 8260C: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) recoveries for 2-Chloroethyl vinyl ether were above control limits for batch 640-89428. Target analyte was not detected in associated field samples. The recoveries and associated sample results for these compounds were qualified with a "J".

Method(s) 8260C: The matrix spike/matrix spike duplicate (MS/MSD) associated with these samples were not analyzed due to the instrument stopping prior to injection; therefore, there are no MS/MSD results available to report. The batch laboratory control sample/laboratory control sample duplicate (LCS/LCSD) have been reported.

No other analytical or quality issues were noted.

VOA Prep

No analytical or quality issues were noted.

Detection Summary

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Client Sample ID: RFI-S7

Lab Sample ID: 640-39444-1

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
trans-1,2-Dichloroethene	0.39	I	1.0	0.26	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	0.46	I	1.0	0.21	ug/L	1		8260C	Total/NA

Client Sample ID: RFI-S10

Lab Sample ID: 640-39444-2

No Detections

Client Sample ID: RFI-S9

Lab Sample ID: 640-39444-3

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.0		2.0	1.0	ug/L	1		8260C_SIM/ID	Total/NA

Client Sample ID: RFI-S16

Lab Sample ID: 640-39444-4

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bromoform	0.45	I	1.0	0.18	ug/L	1		8260C	Total/NA
Vinyl chloride	1.6		1.0	0.22	ug/L	1		8260C	Total/NA

Client Sample ID: RFI-S17

Lab Sample ID: 640-39444-5

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	59		1.0	0.22	ug/L	1		8260C	Total/NA
trans-1,2-Dichloroethene	1.1		1.0	0.26	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	0.88	I	1.0	0.21	ug/L	1		8260C	Total/NA

Client Sample ID: RFI-S13

Lab Sample ID: 640-39444-6

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	5.2		2.0	1.0	ug/L	1		8260C_SIM/ID	Total/NA
Vinyl chloride	20		1.0	0.22	ug/L	1		8260C	Total/NA
trans-1,2-Dichloroethene	0.64	I	1.0	0.26	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	1.5		1.0	0.20	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	1.2		1.0	0.21	ug/L	1		8260C	Total/NA
Chlorobenzene	0.44	I	1.0	0.13	ug/L	1		8260C	Total/NA

Client Sample ID: Equipment Blank-1

Lab Sample ID: 640-39444-7

No Detections

Client Sample ID: FD-1

Lab Sample ID: 640-39444-8

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	5.7		2.0	1.0	ug/L	1		8260C_SIM/ID	Total/NA
Vinyl chloride	20		1.0	0.22	ug/L	1		8260C	Total/NA
trans-1,2-Dichloroethene	0.54	I	1.0	0.26	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	1.4		1.0	0.20	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	1.3		1.0	0.21	ug/L	1		8260C	Total/NA
Chlorobenzene	0.55	I	1.0	0.13	ug/L	1		8260C	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 640-39444-9

No Detections

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Client Sample ID: RFI-S7

Lab Sample ID: 640-39444-1

Date Collected: 07/11/12 12:46

Matrix: Water

Date Received: 07/13/12 09:10

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.28	U	1.0	0.28	ug/L		07/20/12 14:48		1
Bromoform	0.18	U	1.0	0.18	ug/L		07/20/12 14:48		1
Chloromethane	0.18	U	1.0	0.18	ug/L		07/20/12 14:48		1
Vinyl chloride	0.22	U	1.0	0.22	ug/L		07/20/12 14:48		1
Bromomethane	0.51	U	1.0	0.51	ug/L		07/20/12 14:48		1
Chloroethane	0.33	U	1.0	0.33	ug/L		07/20/12 14:48		1
Trichlorofluoromethane	0.21	U	1.0	0.21	ug/L		07/20/12 14:48		1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L		07/20/12 14:48		1
Methylene Chloride	0.21	U	5.0	0.21	ug/L		07/20/12 14:48		1
Methyl tert-butyl ether	0.13	U	1.0	0.13	ug/L		07/20/12 14:48		1
trans-1,2-Dichloroethene	0.39	I	1.0	0.26	ug/L		07/20/12 14:48		1
1,1-Dichloroethane	0.20	U	1.0	0.20	ug/L		07/20/12 14:48		1
cis-1,2-Dichloroethene	0.46	I	1.0	0.21	ug/L		07/20/12 14:48		1
Chloroform	0.12	U	1.0	0.12	ug/L		07/20/12 14:48		1
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L		07/20/12 14:48		1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L		07/20/12 14:48		1
1,2-Dichloroethane	0.15	U	1.0	0.15	ug/L		07/20/12 14:48		1
Benzene	0.13	U	1.0	0.13	ug/L		07/20/12 14:48		1
Trichloroethene	0.16	U	1.0	0.16	ug/L		07/20/12 14:48		1
1,2-Dichloropropane	0.17	U	1.0	0.17	ug/L		07/20/12 14:48		1
Dichlorobromomethane	0.17	U	1.0	0.17	ug/L		07/20/12 14:48		1
2-Chloroethyl vinyl ether	1.2	U J	10	1.2	ug/L		07/20/12 14:48		1
cis-1,3-Dichloropropene	0.14	U	1.0	0.14	ug/L		07/20/12 14:48		1
Toluene	0.14	U	1.0	0.14	ug/L		07/20/12 14:48		1
trans-1,3-Dichloropropene	0.14	U	1.0	0.14	ug/L		07/20/12 14:48		1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L		07/20/12 14:48		1
Tetrachloroethene	0.19	U	1.0	0.19	ug/L		07/20/12 14:48		1
Chlorodibromomethane	0.15	U	1.0	0.15	ug/L		07/20/12 14:48		1
Chlorobenzene	0.13	U	1.0	0.13	ug/L		07/20/12 14:48		1
Ethylbenzene	0.16	U	1.0	0.16	ug/L		07/20/12 14:48		1
1,1,2,2-Tetrachloroethane	0.11	U	1.0	0.11	ug/L		07/20/12 14:48		1
1,3-Dichlorobenzene	0.17	U	1.0	0.17	ug/L		07/20/12 14:48		1
1,4-Dichlorobenzene	0.20	U	1.0	0.20	ug/L		07/20/12 14:48		1
1,2-Dichlorobenzene	0.14	U	1.0	0.14	ug/L		07/20/12 14:48		1
Xylenes, Total	0.44	U	2.0	0.44	ug/L		07/20/12 14:48		1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Dibromofluoromethane	91		81 - 113				07/20/12 14:48		1
Toluene-d8 (Surr)	99		87 - 112				07/20/12 14:48		1
4-Bromofluorobenzene	96		87 - 114				07/20/12 14:48		1

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Client Sample ID: RFI-S10

Lab Sample ID: 640-39444-2

Matrix: Water

Date Collected: 07/11/12 14:19

Date Received: 07/13/12 09:10

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.28	U	1.0	0.28	ug/L		07/20/12 15:10		1
Bromoform	0.18	U	1.0	0.18	ug/L		07/20/12 15:10		1
Chloromethane	0.18	U	1.0	0.18	ug/L		07/20/12 15:10		1
Vinyl chloride	0.22	U	1.0	0.22	ug/L		07/20/12 15:10		1
Bromomethane	0.51	U	1.0	0.51	ug/L		07/20/12 15:10		1
Chloroethane	0.33	U	1.0	0.33	ug/L		07/20/12 15:10		1
Trichlorofluoromethane	0.21	U	1.0	0.21	ug/L		07/20/12 15:10		1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L		07/20/12 15:10		1
Methylene Chloride	0.21	U	5.0	0.21	ug/L		07/20/12 15:10		1
Methyl tert-butyl ether	0.13	U	1.0	0.13	ug/L		07/20/12 15:10		1
trans-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L		07/20/12 15:10		1
1,1-Dichloroethane	0.20	U	1.0	0.20	ug/L		07/20/12 15:10		1
cis-1,2-Dichloroethene	0.21	U	1.0	0.21	ug/L		07/20/12 15:10		1
Chloroform	0.12	U	1.0	0.12	ug/L		07/20/12 15:10		1
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L		07/20/12 15:10		1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L		07/20/12 15:10		1
1,2-Dichloroethane	0.15	U	1.0	0.15	ug/L		07/20/12 15:10		1
Benzene	0.13	U	1.0	0.13	ug/L		07/20/12 15:10		1
Trichloroethene	0.16	U	1.0	0.16	ug/L		07/20/12 15:10		1
1,2-Dichloropropane	0.17	U	1.0	0.17	ug/L		07/20/12 15:10		1
Dichlorobromomethane	0.17	U	1.0	0.17	ug/L		07/20/12 15:10		1
2-Chloroethyl vinyl ether	1.2	U J	10	1.2	ug/L		07/20/12 15:10		1
cis-1,3-Dichloropropene	0.14	U	1.0	0.14	ug/L		07/20/12 15:10		1
Toluene	0.14	U	1.0	0.14	ug/L		07/20/12 15:10		1
trans-1,3-Dichloropropene	0.14	U	1.0	0.14	ug/L		07/20/12 15:10		1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L		07/20/12 15:10		1
Tetrachloroethene	0.19	U	1.0	0.19	ug/L		07/20/12 15:10		1
Chlorodibromomethane	0.15	U	1.0	0.15	ug/L		07/20/12 15:10		1
Chlorobenzene	0.13	U	1.0	0.13	ug/L		07/20/12 15:10		1
Ethylbenzene	0.16	U	1.0	0.16	ug/L		07/20/12 15:10		1
1,1,2,2-Tetrachloroethane	0.11	U	1.0	0.11	ug/L		07/20/12 15:10		1
1,3-Dichlorobenzene	0.17	U	1.0	0.17	ug/L		07/20/12 15:10		1
1,4-Dichlorobenzene	0.20	U	1.0	0.20	ug/L		07/20/12 15:10		1
1,2-Dichlorobenzene	0.14	U	1.0	0.14	ug/L		07/20/12 15:10		1
Xylenes, Total	0.44	U	2.0	0.44	ug/L		07/20/12 15:10		1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Dibromofluoromethane	92		81 - 113				07/20/12 15:10		1
Toluene-d8 (Surr)	100		87 - 112				07/20/12 15:10		1
4-Bromofluorobenzene	98		87 - 114				07/20/12 15:10		1

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Client Sample ID: RFI-S9

Lab Sample ID: 640-39444-3

Date Collected: 07/11/12 15:16

Matrix: Water

Date Received: 07/13/12 09:10

Method: 8260C _SIM/ID - 1,4-Dioxane by SIM/Isotopic Dilution

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0		2.0	1.0	ug/L			07/18/12 12:54	1

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Client Sample ID: RFI-S16

Date Collected: 07/11/12 16:06
Date Received: 07/13/12 09:10

Lab Sample ID: 640-39444-4

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.28	U	1.0	0.28	ug/L		07/20/12 15:31		1
Bromoform	0.45	I	1.0	0.18	ug/L		07/20/12 15:31		1
Chloromethane	0.18	U	1.0	0.18	ug/L		07/20/12 15:31		1
Vinyl chloride	1.6		1.0	0.22	ug/L		07/20/12 15:31		1
Bromomethane	0.51	U	1.0	0.51	ug/L		07/20/12 15:31		1
Chloroethane	0.33	U	1.0	0.33	ug/L		07/20/12 15:31		1
Trichlorofluoromethane	0.21	U	1.0	0.21	ug/L		07/20/12 15:31		1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L		07/20/12 15:31		1
Methylene Chloride	0.21	U	5.0	0.21	ug/L		07/20/12 15:31		1
Methyl tert-butyl ether	0.13	U	1.0	0.13	ug/L		07/20/12 15:31		1
trans-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L		07/20/12 15:31		1
1,1-Dichloroethane	0.20	U	1.0	0.20	ug/L		07/20/12 15:31		1
cis-1,2-Dichloroethene	0.21	U	1.0	0.21	ug/L		07/20/12 15:31		1
Chloroform	0.12	U	1.0	0.12	ug/L		07/20/12 15:31		1
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L		07/20/12 15:31		1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L		07/20/12 15:31		1
1,2-Dichloroethane	0.15	U	1.0	0.15	ug/L		07/20/12 15:31		1
Benzene	0.13	U	1.0	0.13	ug/L		07/20/12 15:31		1
Trichloroethene	0.16	U	1.0	0.16	ug/L		07/20/12 15:31		1
1,2-Dichloropropane	0.17	U	1.0	0.17	ug/L		07/20/12 15:31		1
Dichlorobromomethane	0.17	U	1.0	0.17	ug/L		07/20/12 15:31		1
2-Chloroethyl vinyl ether	1.2	U J	10	1.2	ug/L		07/20/12 15:31		1
cis-1,3-Dichloropropene	0.14	U	1.0	0.14	ug/L		07/20/12 15:31		1
Toluene	0.14	U	1.0	0.14	ug/L		07/20/12 15:31		1
trans-1,3-Dichloropropene	0.14	U	1.0	0.14	ug/L		07/20/12 15:31		1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L		07/20/12 15:31		1
Tetrachloroethene	0.19	U	1.0	0.19	ug/L		07/20/12 15:31		1
Chlorodibromomethane	0.15	U	1.0	0.15	ug/L		07/20/12 15:31		1
Chlorobenzene	0.13	U	1.0	0.13	ug/L		07/20/12 15:31		1
Ethylbenzene	0.16	U	1.0	0.16	ug/L		07/20/12 15:31		1
1,1,2,2-Tetrachloroethane	0.11	U	1.0	0.11	ug/L		07/20/12 15:31		1
1,3-Dichlorobenzene	0.17	U	1.0	0.17	ug/L		07/20/12 15:31		1
1,4-Dichlorobenzene	0.20	U	1.0	0.20	ug/L		07/20/12 15:31		1
1,2-Dichlorobenzene	0.14	U	1.0	0.14	ug/L		07/20/12 15:31		1
Xylenes, Total	0.44	U	2.0	0.44	ug/L		07/20/12 15:31		1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Dibromofluoromethane	90		81 - 113				07/20/12 15:31		1
Toluene-d8 (Surr)	100		87 - 112				07/20/12 15:31		1
4-Bromofluorobenzene	98		87 - 114				07/20/12 15:31		1

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Client Sample ID: RFI-S17

Lab Sample ID: 640-39444-5

Date Collected: 07/11/12 16:53

Matrix: Water

Date Received: 07/13/12 09:10

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.28	U	1.0	0.28	ug/L		07/20/12 15:53		1
Bromoform	0.18	U	1.0	0.18	ug/L		07/20/12 15:53		1
Chloromethane	0.18	U	1.0	0.18	ug/L		07/20/12 15:53		1
Vinyl chloride	59		1.0	0.22	ug/L		07/20/12 15:53		1
Bromomethane	0.51	U	1.0	0.51	ug/L		07/20/12 15:53		1
Chloroethane	0.33	U	1.0	0.33	ug/L		07/20/12 15:53		1
Trichlorofluoromethane	0.21	U	1.0	0.21	ug/L		07/20/12 15:53		1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L		07/20/12 15:53		1
Methylene Chloride	0.21	U	5.0	0.21	ug/L		07/20/12 15:53		1
Methyl tert-butyl ether	0.13	U	1.0	0.13	ug/L		07/20/12 15:53		1
trans-1,2-Dichloroethene	1.1		1.0	0.26	ug/L		07/20/12 15:53		1
1,1-Dichloroethane	0.20	U	1.0	0.20	ug/L		07/20/12 15:53		1
cis-1,2-Dichloroethene	0.88 I		1.0	0.21	ug/L		07/20/12 15:53		1
Chloroform	0.12	U	1.0	0.12	ug/L		07/20/12 15:53		1
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L		07/20/12 15:53		1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L		07/20/12 15:53		1
1,2-Dichloroethane	0.15	U	1.0	0.15	ug/L		07/20/12 15:53		1
Benzene	0.13	U	1.0	0.13	ug/L		07/20/12 15:53		1
Trichloroethene	0.16	U	1.0	0.16	ug/L		07/20/12 15:53		1
1,2-Dichloropropane	0.17	U	1.0	0.17	ug/L		07/20/12 15:53		1
Dichlorobromomethane	0.17	U	1.0	0.17	ug/L		07/20/12 15:53		1
2-Chloroethyl vinyl ether	1.2	U J	10	1.2	ug/L		07/20/12 15:53		1
cis-1,3-Dichloropropene	0.14	U	1.0	0.14	ug/L		07/20/12 15:53		1
Toluene	0.14	U	1.0	0.14	ug/L		07/20/12 15:53		1
trans-1,3-Dichloropropene	0.14	U	1.0	0.14	ug/L		07/20/12 15:53		1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L		07/20/12 15:53		1
Tetrachloroethene	0.19	U	1.0	0.19	ug/L		07/20/12 15:53		1
Chlorodibromomethane	0.15	U	1.0	0.15	ug/L		07/20/12 15:53		1
Chlorobenzene	0.13	U	1.0	0.13	ug/L		07/20/12 15:53		1
Ethylbenzene	0.16	U	1.0	0.16	ug/L		07/20/12 15:53		1
1,1,2,2-Tetrachloroethane	0.11	U	1.0	0.11	ug/L		07/20/12 15:53		1
1,3-Dichlorobenzene	0.17	U	1.0	0.17	ug/L		07/20/12 15:53		1
1,4-Dichlorobenzene	0.20	U	1.0	0.20	ug/L		07/20/12 15:53		1
1,2-Dichlorobenzene	0.14	U	1.0	0.14	ug/L		07/20/12 15:53		1
Xylenes, Total	0.44	U	2.0	0.44	ug/L		07/20/12 15:53		1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Dibromofluoromethane	90		81 - 113			07/20/12 15:53		1	
Toluene-d8 (Surr)	101		87 - 112			07/20/12 15:53		1	
4-Bromofluorobenzene	97		87 - 114			07/20/12 15:53		1	

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Client Sample ID: RFI-S13

Date Collected: 07/11/12 17:41

Date Received: 07/13/12 09:10

Lab Sample ID: 640-39444-6

Matrix: Water

Method: 8260C _SIM/ID - 1,4-Dioxane by SIM/Isotopic Dilution

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	5.2		2.0	1.0	ug/L			07/18/12 13:14	1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.28	U	1.0	0.28	ug/L			07/20/12 16:14	1
Bromoform	0.18	U	1.0	0.18	ug/L			07/20/12 16:14	1
Chloromethane	0.18	U	1.0	0.18	ug/L			07/20/12 16:14	1
Vinyl chloride	20		1.0	0.22	ug/L			07/20/12 16:14	1
Bromomethane	0.51	U	1.0	0.51	ug/L			07/20/12 16:14	1
Chloroethane	0.33	U	1.0	0.33	ug/L			07/20/12 16:14	1
Trichlorofluoromethane	0.21	U	1.0	0.21	ug/L			07/20/12 16:14	1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L			07/20/12 16:14	1
Methylene Chloride	0.21	U	5.0	0.21	ug/L			07/20/12 16:14	1
Methyl tert-butyl ether	0.13	U	1.0	0.13	ug/L			07/20/12 16:14	1
trans-1,2-Dichloroethene	0.64	I	1.0	0.26	ug/L			07/20/12 16:14	1
1,1-Dichloroethane	1.5		1.0	0.20	ug/L			07/20/12 16:14	1
cis-1,2-Dichloroethene	1.2		1.0	0.21	ug/L			07/20/12 16:14	1
Chloroform	0.12	U	1.0	0.12	ug/L			07/20/12 16:14	1
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L			07/20/12 16:14	1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L			07/20/12 16:14	1
1,2-Dichloroethane	0.15	U	1.0	0.15	ug/L			07/20/12 16:14	1
Benzene	0.13	U	1.0	0.13	ug/L			07/20/12 16:14	1
Trichloroethene	0.16	U	1.0	0.16	ug/L			07/20/12 16:14	1
1,2-Dichloropropane	0.17	U	1.0	0.17	ug/L			07/20/12 16:14	1
Dichlorobromomethane	0.17	U	1.0	0.17	ug/L			07/20/12 16:14	1
2-Chloroethyl vinyl ether	1.2	U J	10	1.2	ug/L			07/20/12 16:14	1
cis-1,3-Dichloropropene	0.14	U	1.0	0.14	ug/L			07/20/12 16:14	1
Toluene	0.14	U	1.0	0.14	ug/L			07/20/12 16:14	1
trans-1,3-Dichloropropene	0.14	U	1.0	0.14	ug/L			07/20/12 16:14	1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L			07/20/12 16:14	1
Tetrachloroethene	0.19	U	1.0	0.19	ug/L			07/20/12 16:14	1
Chlorodibromomethane	0.15	U	1.0	0.15	ug/L			07/20/12 16:14	1
Chlorobenzene	0.44	I	1.0	0.13	ug/L			07/20/12 16:14	1
Ethylbenzene	0.16	U	1.0	0.16	ug/L			07/20/12 16:14	1
1,1,2,2-Tetrachloroethane	0.11	U	1.0	0.11	ug/L			07/20/12 16:14	1
1,3-Dichlorobenzene	0.17	U	1.0	0.17	ug/L			07/20/12 16:14	1
1,4-Dichlorobenzene	0.20	U	1.0	0.20	ug/L			07/20/12 16:14	1
1,2-Dichlorobenzene	0.14	U	1.0	0.14	ug/L			07/20/12 16:14	1
Xylenes, Total	0.44	U	2.0	0.44	ug/L			07/20/12 16:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	92		81 - 113			
Toluene-d8 (Surr)	98		87 - 112			
4-Bromofluorobenzene	97		87 - 114			

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Client Sample ID: Equipment Blank-1

Lab Sample ID: 640-39444-7

Matrix: Water

Date Collected: 07/11/12 18:10
Date Received: 07/13/12 09:10

Method: 8260C _SIM/ID - 1,4-Dioxane by SIM/Isotopic Dilution

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.0	U	2.0	1.0	ug/L			07/18/12 12:11	1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.28	U	1.0	0.28	ug/L			07/20/12 12:58	1
Bromoform	0.18	U	1.0	0.18	ug/L			07/20/12 12:58	1
Chloromethane	0.18	U	1.0	0.18	ug/L			07/20/12 12:58	1
Vinyl chloride	0.22	U	1.0	0.22	ug/L			07/20/12 12:58	1
Bromomethane	0.51	U	1.0	0.51	ug/L			07/20/12 12:58	1
Chloroethane	0.33	U	1.0	0.33	ug/L			07/20/12 12:58	1
Trichlorofluoromethane	0.21	U	1.0	0.21	ug/L			07/20/12 12:58	1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L			07/20/12 12:58	1
Methylene Chloride	0.21	U	5.0	0.21	ug/L			07/20/12 12:58	1
Methyl tert-butyl ether	0.13	U	1.0	0.13	ug/L			07/20/12 12:58	1
trans-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			07/20/12 12:58	1
1,1-Dichloroethane	0.20	U	1.0	0.20	ug/L			07/20/12 12:58	1
cis-1,2-Dichloroethene	0.21	U	1.0	0.21	ug/L			07/20/12 12:58	1
Chloroform	0.12	U	1.0	0.12	ug/L			07/20/12 12:58	1
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L			07/20/12 12:58	1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L			07/20/12 12:58	1
1,2-Dichloroethane	0.15	U	1.0	0.15	ug/L			07/20/12 12:58	1
Benzene	0.13	U	1.0	0.13	ug/L			07/20/12 12:58	1
Trichloroethene	0.16	U	1.0	0.16	ug/L			07/20/12 12:58	1
1,2-Dichloropropane	0.17	U	1.0	0.17	ug/L			07/20/12 12:58	1
Dichlorobromomethane	0.17	U	1.0	0.17	ug/L			07/20/12 12:58	1
2-Chloroethyl vinyl ether	1.2	U J	10	1.2	ug/L			07/20/12 12:58	1
cis-1,3-Dichloropropene	0.14	U	1.0	0.14	ug/L			07/20/12 12:58	1
Toluene	0.14	U	1.0	0.14	ug/L			07/20/12 12:58	1
trans-1,3-Dichloropropene	0.14	U	1.0	0.14	ug/L			07/20/12 12:58	1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L			07/20/12 12:58	1
Tetrachloroethene	0.19	U	1.0	0.19	ug/L			07/20/12 12:58	1
Chlorodibromomethane	0.15	U	1.0	0.15	ug/L			07/20/12 12:58	1
Chlorobenzene	0.13	U	1.0	0.13	ug/L			07/20/12 12:58	1
Ethylbenzene	0.16	U	1.0	0.16	ug/L			07/20/12 12:58	1
1,1,2,2-Tetrachloroethane	0.11	U	1.0	0.11	ug/L			07/20/12 12:58	1
1,3-Dichlorobenzene	0.17	U	1.0	0.17	ug/L			07/20/12 12:58	1
1,4-Dichlorobenzene	0.20	U	1.0	0.20	ug/L			07/20/12 12:58	1
1,2-Dichlorobenzene	0.14	U	1.0	0.14	ug/L			07/20/12 12:58	1
Xylenes, Total	0.44	U	2.0	0.44	ug/L			07/20/12 12:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	94		81 - 113			1
Toluene-d8 (Surr)	99		87 - 112			1
4-Bromofluorobenzene	97		87 - 114			1

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Client Sample ID: FD-1

Date Collected: 07/11/12 00:00
Date Received: 07/13/12 09:10

Lab Sample ID: 640-39444-8

Matrix: Water

Method: 8260C _SIM/ID - 1,4-Dioxane by SIM/Isotopic Dilution

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	5.7		2.0	1.0	ug/L			07/18/12 13:35	1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.28	U	1.0	0.28	ug/L			07/20/12 16:36	1
Bromoform	0.18	U	1.0	0.18	ug/L			07/20/12 16:36	1
Chloromethane	0.18	U	1.0	0.18	ug/L			07/20/12 16:36	1
Vinyl chloride	20		1.0	0.22	ug/L			07/20/12 16:36	1
Bromomethane	0.51	U	1.0	0.51	ug/L			07/20/12 16:36	1
Chloroethane	0.33	U	1.0	0.33	ug/L			07/20/12 16:36	1
Trichlorofluoromethane	0.21	U	1.0	0.21	ug/L			07/20/12 16:36	1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L			07/20/12 16:36	1
Methylene Chloride	0.21	U	5.0	0.21	ug/L			07/20/12 16:36	1
Methyl tert-butyl ether	0.13	U	1.0	0.13	ug/L			07/20/12 16:36	1
trans-1,2-Dichloroethene	0.54	I	1.0	0.26	ug/L			07/20/12 16:36	1
1,1-Dichloroethane	1.4		1.0	0.20	ug/L			07/20/12 16:36	1
cis-1,2-Dichloroethene	1.3		1.0	0.21	ug/L			07/20/12 16:36	1
Chloroform	0.12	U	1.0	0.12	ug/L			07/20/12 16:36	1
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L			07/20/12 16:36	1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L			07/20/12 16:36	1
1,2-Dichloroethane	0.15	U	1.0	0.15	ug/L			07/20/12 16:36	1
Benzene	0.13	U	1.0	0.13	ug/L			07/20/12 16:36	1
Trichloroethene	0.16	U	1.0	0.16	ug/L			07/20/12 16:36	1
1,2-Dichloropropane	0.17	U	1.0	0.17	ug/L			07/20/12 16:36	1
Dichlorobromomethane	0.17	U	1.0	0.17	ug/L			07/20/12 16:36	1
2-Chloroethyl vinyl ether	1.2	U J	10	1.2	ug/L			07/20/12 16:36	1
cis-1,3-Dichloropropene	0.14	U	1.0	0.14	ug/L			07/20/12 16:36	1
Toluene	0.14	U	1.0	0.14	ug/L			07/20/12 16:36	1
trans-1,3-Dichloropropene	0.14	U	1.0	0.14	ug/L			07/20/12 16:36	1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L			07/20/12 16:36	1
Tetrachloroethene	0.19	U	1.0	0.19	ug/L			07/20/12 16:36	1
Chlorodibromomethane	0.15	U	1.0	0.15	ug/L			07/20/12 16:36	1
Chlorobenzene	0.55	I	1.0	0.13	ug/L			07/20/12 16:36	1
Ethylbenzene	0.16	U	1.0	0.16	ug/L			07/20/12 16:36	1
1,1,2,2-Tetrachloroethane	0.11	U	1.0	0.11	ug/L			07/20/12 16:36	1
1,3-Dichlorobenzene	0.17	U	1.0	0.17	ug/L			07/20/12 16:36	1
1,4-Dichlorobenzene	0.20	U	1.0	0.20	ug/L			07/20/12 16:36	1
1,2-Dichlorobenzene	0.14	U	1.0	0.14	ug/L			07/20/12 16:36	1
Xylenes, Total	0.44	U	2.0	0.44	ug/L			07/20/12 16:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	92		81 - 113			1
Toluene-d8 (Surr)	101		87 - 112			1
4-Bromofluorobenzene	94		87 - 114			1

Client Sample Results

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Client Sample ID: Trip Blank

Lab Sample ID: 640-39444-9

Matrix: Water

Date Collected: 07/11/12 00:00

Date Received: 07/13/12 09:10

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.28	U	1.0	0.28	ug/L		07/20/12 12:36		1
Bromoform	0.18	U	1.0	0.18	ug/L		07/20/12 12:36		1
Chloromethane	0.18	U	1.0	0.18	ug/L		07/20/12 12:36		1
Vinyl chloride	0.22	U	1.0	0.22	ug/L		07/20/12 12:36		1
Bromomethane	0.51	U	1.0	0.51	ug/L		07/20/12 12:36		1
Chloroethane	0.33	U	1.0	0.33	ug/L		07/20/12 12:36		1
Trichlorofluoromethane	0.21	U	1.0	0.21	ug/L		07/20/12 12:36		1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L		07/20/12 12:36		1
Methylene Chloride	0.21	U	5.0	0.21	ug/L		07/20/12 12:36		1
Methyl tert-butyl ether	0.13	U	1.0	0.13	ug/L		07/20/12 12:36		1
trans-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L		07/20/12 12:36		1
1,1-Dichloroethane	0.20	U	1.0	0.20	ug/L		07/20/12 12:36		1
cis-1,2-Dichloroethene	0.21	U	1.0	0.21	ug/L		07/20/12 12:36		1
Chloroform	0.12	U	1.0	0.12	ug/L		07/20/12 12:36		1
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L		07/20/12 12:36		1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L		07/20/12 12:36		1
1,2-Dichloroethane	0.15	U	1.0	0.15	ug/L		07/20/12 12:36		1
Benzene	0.13	U	1.0	0.13	ug/L		07/20/12 12:36		1
Trichloroethene	0.16	U	1.0	0.16	ug/L		07/20/12 12:36		1
1,2-Dichloropropane	0.17	U	1.0	0.17	ug/L		07/20/12 12:36		1
Dichlorobromomethane	0.17	U	1.0	0.17	ug/L		07/20/12 12:36		1
2-Chloroethyl vinyl ether	1.2	U J	10	1.2	ug/L		07/20/12 12:36		1
cis-1,3-Dichloropropene	0.14	U	1.0	0.14	ug/L		07/20/12 12:36		1
Toluene	0.14	U	1.0	0.14	ug/L		07/20/12 12:36		1
trans-1,3-Dichloropropene	0.14	U	1.0	0.14	ug/L		07/20/12 12:36		1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L		07/20/12 12:36		1
Tetrachloroethene	0.19	U	1.0	0.19	ug/L		07/20/12 12:36		1
Chlorodibromomethane	0.15	U	1.0	0.15	ug/L		07/20/12 12:36		1
Chlorobenzene	0.13	U	1.0	0.13	ug/L		07/20/12 12:36		1
Ethylbenzene	0.16	U	1.0	0.16	ug/L		07/20/12 12:36		1
1,1,2,2-Tetrachloroethane	0.11	U	1.0	0.11	ug/L		07/20/12 12:36		1
1,3-Dichlorobenzene	0.17	U	1.0	0.17	ug/L		07/20/12 12:36		1
1,4-Dichlorobenzene	0.20	U	1.0	0.20	ug/L		07/20/12 12:36		1
1,2-Dichlorobenzene	0.14	U	1.0	0.14	ug/L		07/20/12 12:36		1
Xylenes, Total	0.44	U	2.0	0.44	ug/L		07/20/12 12:36		1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Dibromofluoromethane	92		81 - 113				07/20/12 12:36		1
Toluene-d8 (Surr)	101		87 - 112				07/20/12 12:36		1
4-Bromofluorobenzene	91		87 - 114				07/20/12 12:36		1

Surrogate Summary

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DBFM (81-113)	TOL (87-112)	BFB (87-114)
640-39444-1	RFI-S7	91	99	96
640-39444-2	RFI-S10	92	100	98
640-39444-4	RFI-S16	90	100	98
640-39444-5	RFI-S17	90	101	97
640-39444-6	RFI-S13	92	98	97
640-39444-7	Equipment Blank-1	94	99	97
640-39444-8	FD-1	92	101	94
640-39444-9	Trip Blank	92	101	91
LCS 640-94365/3	Lab Control Sample	98	99	102
LCSD 640-94365/4	Lab Control Sample Dup	96	100	99
MB 640-94365/5	Method Blank	96	100	101

Surrogate Legend

DBFM = Dibromofluoromethane

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 640-94365/5

Matrix: Water

Analysis Batch: 94365

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Dichlorodifluoromethane	0.28	U	1.0	0.28	ug/L			07/20/12 11:01	1
Bromoform	0.18	U	1.0	0.18	ug/L			07/20/12 11:01	1
Chloromethane	0.18	U	1.0	0.18	ug/L			07/20/12 11:01	1
Vinyl chloride	0.22	U	1.0	0.22	ug/L			07/20/12 11:01	1
Bromomethane	0.51	U	1.0	0.51	ug/L			07/20/12 11:01	1
Chloroethane	0.33	U	1.0	0.33	ug/L			07/20/12 11:01	1
Trichlorofluoromethane	0.21	U	1.0	0.21	ug/L			07/20/12 11:01	1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L			07/20/12 11:01	1
Methylene Chloride	0.21	U	5.0	0.21	ug/L			07/20/12 11:01	1
Methyl tert-butyl ether	0.13	U	1.0	0.13	ug/L			07/20/12 11:01	1
trans-1,2-Dichloroethene	0.26	U	1.0	0.26	ug/L			07/20/12 11:01	1
1,1-Dichloroethane	0.20	U	1.0	0.20	ug/L			07/20/12 11:01	1
cis-1,2-Dichloroethene	0.21	U	1.0	0.21	ug/L			07/20/12 11:01	1
Chloroform	0.12	U	1.0	0.12	ug/L			07/20/12 11:01	1
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L			07/20/12 11:01	1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L			07/20/12 11:01	1
1,2-Dichloroethane	0.15	U	1.0	0.15	ug/L			07/20/12 11:01	1
Benzene	0.13	U	1.0	0.13	ug/L			07/20/12 11:01	1
Trichloroethene	0.16	U	1.0	0.16	ug/L			07/20/12 11:01	1
1,2-Dichloropropane	0.17	U	1.0	0.17	ug/L			07/20/12 11:01	1
Dichlorobromomethane	0.17	U	1.0	0.17	ug/L			07/20/12 11:01	1
2-Chloroethyl vinyl ether	1.2	U	10	1.2	ug/L			07/20/12 11:01	1
cis-1,3-Dichloropropene	0.14	U	1.0	0.14	ug/L			07/20/12 11:01	1
Toluene	0.14	U	1.0	0.14	ug/L			07/20/12 11:01	1
trans-1,3-Dichloropropene	0.14	U	1.0	0.14	ug/L			07/20/12 11:01	1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L			07/20/12 11:01	1
Tetrachloroethene	0.19	U	1.0	0.19	ug/L			07/20/12 11:01	1
Chlorodibromomethane	0.15	U	1.0	0.15	ug/L			07/20/12 11:01	1
Chlorobenzene	0.13	U	1.0	0.13	ug/L			07/20/12 11:01	1
Ethylbenzene	0.16	U	1.0	0.16	ug/L			07/20/12 11:01	1
1,1,2,2-Tetrachloroethane	0.11	U	1.0	0.11	ug/L			07/20/12 11:01	1
1,3-Dichlorobenzene	0.17	U	1.0	0.17	ug/L			07/20/12 11:01	1
1,4-Dichlorobenzene	0.20	U	1.0	0.20	ug/L			07/20/12 11:01	1
1,2-Dichlorobenzene	0.14	U	1.0	0.14	ug/L			07/20/12 11:01	1
Xylenes, Total	0.44	U	2.0	0.44	ug/L			07/20/12 11:01	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Dibromofluoromethane	96		81 - 113			1
Toluene-d8 (Surr)	100		87 - 112			1
4-Bromofluorobenzene	101		87 - 114			1

Lab Sample ID: LCS 640-94365/3

Matrix: Water

Analysis Batch: 94365

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike	LCS	LCS	%Rec.		
	Added	Result	Qualifier	Unit	D	%Rec
Dichlorodifluoromethane	30.0	33.0		ug/L	110	57 - 170
Bromoform	30.0	28.2		ug/L	94	64 - 132
Chloromethane	30.0	20.3		ug/L	68	61 - 136

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 640-94365/3

Matrix: Water

Analysis Batch: 94365

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Unit	D	%Rec	Limits	%Rec.
	Added	Result	Qualifier					
Vinyl chloride	30.0	26.5		ug/L		88	70 - 139	
Bromomethane	30.0	29.2		ug/L		97	37 - 146	
Chloroethane	30.0	26.7		ug/L		89	47 - 160	
Trichlorofluoromethane	30.0	31.8		ug/L		106	84 - 139	
1,1-Dichloroethene	30.0	30.2		ug/L		101	72 - 133	
Methylene Chloride	30.0	27.1		ug/L		90	75 - 125	
Methyl tert-butyl ether	30.0	26.9		ug/L		90	73 - 122	
trans-1,2-Dichloroethene	30.0	28.4		ug/L		95	77 - 128	
1,1-Dichloroethane	30.0	27.2		ug/L		91	78 - 124	
cis-1,2-Dichloroethene	30.0	26.6		ug/L		89	75 - 128	
Chloroform	30.0	29.5		ug/L		98	81 - 120	
1,1,1-Trichloroethane	30.0	34.4		ug/L		115	85 - 122	
Carbon tetrachloride	30.0	34.4		ug/L		115	79 - 126	
1,2-Dichloroethane	30.0	32.8		ug/L		109	82 - 123	
Benzene	30.0	29.2		ug/L		97	80 - 120	
Trichloroethene	30.0	31.0		ug/L		103	82 - 121	
1,2-Dichloropropane	30.0	27.8		ug/L		93	78 - 121	
Dichlorobromomethane	30.0	31.4		ug/L		105	82 - 120	
2-Chloroethyl vinyl ether	300	571	J	ug/L		190	13 - 160	
cis-1,3-Dichloropropene	30.0	29.9		ug/L		100	79 - 120	
Toluene	30.0	30.3		ug/L		101	82 - 122	
trans-1,3-Dichloropropene	30.0	30.8		ug/L		103	76 - 122	
1,1,2-Trichloroethane	30.0	29.0		ug/L		97	76 - 122	
Tetrachloroethene	30.0	32.0		ug/L		107	81 - 126	
Chlorodibromomethane	30.0	30.0		ug/L		100	73 - 125	
Chlorobenzene	30.0	30.4		ug/L		101	82 - 116	
Ethylbenzene	30.0	30.7		ug/L		102	85 - 119	
1,1,2,2-Tetrachloroethane	30.0	28.6		ug/L		95	78 - 118	
1,3-Dichlorobenzene	30.0	30.3		ug/L		101	85 - 119	
1,4-Dichlorobenzene	30.0	31.1		ug/L		104	82 - 119	
1,2-Dichlorobenzene	30.0	30.4		ug/L		101	83 - 122	
Xylenes, Total	90.0	93.4		ug/L		104	86 - 123	

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Dibromoform	98		81 - 113
Toluene-d8 (Surr)	99		87 - 112
4-Bromofluorobenzene	102		87 - 114

Lab Sample ID: LCSD 640-94365/4

Matrix: Water

Analysis Batch: 94365

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	Limits	RPD	Limit
	Added	Result	Qualifier						
Dichlorodifluoromethane	30.0	31.4		ug/L		105	57 - 170	5	39
Bromoform	30.0	27.4		ug/L		91	64 - 132	3	20
Chloromethane	30.0	19.2		ug/L		64	61 - 136	6	20
Vinyl chloride	30.0	24.5		ug/L		82	70 - 139	8	20
Bromomethane	30.0	26.9		ug/L		90	37 - 146	8	38
Chloroethane	30.0	25.1		ug/L		84	47 - 160	6	35

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 640-94365/4

Matrix: Water

Analysis Batch: 94365

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	Limits	RPD	RPD Limit
	Added	Result	Qualifier						
Trichlorofluoromethane	30.0	30.7		ug/L		102	84 - 139	4	20
1,1-Dichloroethene	30.0	29.2		ug/L		97	72 - 133	3	24
Methylene Chloride	30.0	26.0		ug/L		87	75 - 125	4	22
Methyl tert-butyl ether	30.0	26.2		ug/L		87	73 - 122	3	20
trans-1,2-Dichloroethene	30.0	27.7		ug/L		92	77 - 128	3	22
1,1-Dichloroethane	30.0	26.3		ug/L		88	78 - 124	3	20
cis-1,2-Dichloroethene	30.0	26.3		ug/L		88	75 - 128	1	20
Chloroform	30.0	28.6		ug/L		95	81 - 120	3	20
1,1,1-Trichloroethane	30.0	32.9		ug/L		110	85 - 122	4	20
Carbon tetrachloride	30.0	32.5		ug/L		108	79 - 126	6	20
1,2-Dichloroethane	30.0	31.9		ug/L		106	82 - 123	3	20
Benzene	30.0	28.5		ug/L		95	80 - 120	2	20
Trichloroethene	30.0	30.2		ug/L		101	82 - 121	3	20
1,2-Dichloropropane	30.0	26.9		ug/L		90	78 - 121	3	20
Dichlorobromomethane	30.0	30.5		ug/L		102	82 - 120	3	20
2-Chloroethyl vinyl ether	300	577	J	ug/L		192	13 - 160	1	40
cis-1,3-Dichloropropene	30.0	29.0		ug/L		97	79 - 120	3	20
Toluene	30.0	29.0		ug/L		97	82 - 122	4	20
trans-1,3-Dichloropropene	30.0	29.5		ug/L		98	76 - 122	4	20
1,1,2-Trichloroethane	30.0	29.4		ug/L		98	76 - 122	1	20
Tetrachloroethene	30.0	31.8		ug/L		106	81 - 126	1	20
Chlorodibromomethane	30.0	28.8		ug/L		96	73 - 125	4	20
Chlorobenzene	30.0	29.2		ug/L		97	82 - 116	4	20
Ethylbenzene	30.0	29.4		ug/L		98	85 - 119	5	20
1,1,2,2-Tetrachloroethane	30.0	27.9		ug/L		93	78 - 118	3	20
1,3-Dichlorobenzene	30.0	29.4		ug/L		98	85 - 119	3	20
1,4-Dichlorobenzene	30.0	30.6		ug/L		102	82 - 119	2	20
1,2-Dichlorobenzene	30.0	30.2		ug/L		101	83 - 122	1	20
Xylenes, Total	90.0	89.6		ug/L		100	86 - 123	4	20

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
Dibromofluoromethane	96		81 - 113
Toluene-d8 (Surr)	100		87 - 112
4-Bromofluorobenzene	99		87 - 114

Method: 8260C _SIM/ID - 1,4-Dioxane by SIM/Isotopic Dilution

Lab Sample ID: MB 660-126773/5

Matrix: Water

Analysis Batch: 126773

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	1.0	U	2.0	1.0	ug/L			07/18/12 09:54	1

QC Sample Results

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Method: 8260C _SIM/ID - 1,4-Dioxane by SIM/Isotopic Dilution (Continued)

Lab Sample ID: LCS 660-126773/3

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Matrix: Water

Analysis Batch: 126773

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	Limits
1,4-Dioxane	25.0	26.5		ug/L		106		50 - 150

QC Association Summary

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

GC/MS VOA

Analysis Batch: 94365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
640-39444-1	RFI-S7	Total/NA	Water	8260C	5
640-39444-2	RFI-S10	Total/NA	Water	8260C	5
640-39444-4	RFI-S16	Total/NA	Water	8260C	6
640-39444-5	RFI-S17	Total/NA	Water	8260C	6
640-39444-6	RFI-S13	Total/NA	Water	8260C	7
640-39444-7	Equipment Blank-1	Total/NA	Water	8260C	7
640-39444-8	FD-1	Total/NA	Water	8260C	8
640-39444-9	Trip Blank	Total/NA	Water	8260C	8
LCS 640-94365/3	Lab Control Sample	Total/NA	Water	8260C	9
LCSD 640-94365/4	Lab Control Sample Dup	Total/NA	Water	8260C	9
MB 640-94365/5	Method Blank	Total/NA	Water	8260C	10

Analysis Batch: 126773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
640-39444-3	RFI-S9	Total/NA	Water	8260C _SIM/ID	11
640-39444-6	RFI-S13	Total/NA	Water	8260C _SIM/ID	12
640-39444-7	Equipment Blank-1	Total/NA	Water	8260C _SIM/ID	12
640-39444-8	FD-1	Total/NA	Water	8260C _SIM/ID	13
LCS 660-126773/3	Lab Control Sample	Total/NA	Water	8260C _SIM/ID	13
MB 660-126773/5	Method Blank	Total/NA	Water	8260C _SIM/ID	14

Lab Chronicle

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Client Sample ID: RFI-S7

Date Collected: 07/11/12 12:46

Date Received: 07/13/12 09:10

Lab Sample ID: 640-39444-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	94365	07/20/12 14:48	LS	TAL TAL

Client Sample ID: RFI-S10

Date Collected: 07/11/12 14:19

Date Received: 07/13/12 09:10

Lab Sample ID: 640-39444-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	94365	07/20/12 15:10	LS	TAL TAL

Client Sample ID: RFI-S9

Date Collected: 07/11/12 15:16

Date Received: 07/13/12 09:10

Lab Sample ID: 640-39444-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C _SIM/ID		1	126773	07/18/12 12:54	EC	TAL TAM

Client Sample ID: RFI-S16

Date Collected: 07/11/12 16:06

Date Received: 07/13/12 09:10

Lab Sample ID: 640-39444-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	94365	07/20/12 15:31	LS	TAL TAL

Client Sample ID: RFI-S17

Date Collected: 07/11/12 16:53

Date Received: 07/13/12 09:10

Lab Sample ID: 640-39444-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	94365	07/20/12 15:53	LS	TAL TAL

Client Sample ID: RFI-S13

Date Collected: 07/11/12 17:41

Date Received: 07/13/12 09:10

Lab Sample ID: 640-39444-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	94365	07/20/12 16:14	LS	TAL TAL
Total/NA	Analysis	8260C _SIM/ID		1	126773	07/18/12 13:14	EC	TAL TAM

Lab Chronicle

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Client Sample ID: Equipment Blank-1

Date Collected: 07/11/12 18:10
Date Received: 07/13/12 09:10

Lab Sample ID: 640-39444-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	94365	07/20/12 12:58	LS	TAL TAL
Total/NA	Analysis	8260C _SIM/ID		1	126773	07/18/12 12:11	EC	TAL TAM

Client Sample ID: FD-1

Date Collected: 07/11/12 00:00
Date Received: 07/13/12 09:10

Lab Sample ID: 640-39444-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	94365	07/20/12 16:36	LS	TAL TAL
Total/NA	Analysis	8260C _SIM/ID		1	126773	07/18/12 13:35	EC	TAL TAM

Client Sample ID: Trip Blank

Date Collected: 07/11/12 00:00
Date Received: 07/13/12 09:10

Lab Sample ID: 640-39444-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	94365	07/20/12 12:36	LS	TAL TAL

Laboratory References:

TAL TAL = TestAmerica Tallahassee, 2846 Industrial Plaza Drive, Tallahassee, FL 32301, TEL (850)878-3994

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

Certification Summary

Client: Northrop Grumman Corp.

Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Laboratory: TestAmerica Tallahassee

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Florida	NELAC	4	E81005	06-30-13
Louisiana	NELAC	6	30663	06-30-13
New Jersey	NELAC	2	FL012	06-30-13
Oklahoma	State Program	6	9986	08-31-12
Texas	NELAC	6	T104704459-11-2	03-31-13
USDA	Federal		P330-08-00158	08-05-14

Laboratory: TestAmerica Tampa

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40610	06-30-13
Florida	NELAC	4	E84282	06-30-13
Georgia	State Program	4	905	07-31-12
USDA	Federal		P330-11-00177	04-20-14

Method Summary

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL TAL
8260C _SIM/ID	1,4-Dioxane by SIM/Isotopic Dilution	SW846	TAL TAM

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL TAL = TestAmerica Tallahassee, 2846 Industrial Plaza Drive, Tallahassee, FL 32301, TEL (850)878-3994

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

Sample Summary

Client: Northrop Grumman Corp.
Project/Site: NG - St. Augustine

TestAmerica Job ID: 640-39444-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
640-39444-1	RFI-S7	Water	07/11/12 12:46	07/13/12 09:10
640-39444-2	RFI-S10	Water	07/11/12 14:19	07/13/12 09:10
640-39444-3	RFI-S9	Water	07/11/12 15:16	07/13/12 09:10
640-39444-4	RFI-S16	Water	07/11/12 16:06	07/13/12 09:10
640-39444-5	RFI-S17	Water	07/11/12 16:53	07/13/12 09:10
640-39444-6	RFI-S13	Water	07/11/12 17:41	07/13/12 09:10
640-39444-7	Equipment Blank-1	Water	07/11/12 18:10	07/13/12 09:10
640-39444-8	FD-1	Water	07/11/12 00:00	07/13/12 09:10
640-39444-9	Trip Blank	Water	07/11/12 00:00	07/13/12 09:10

TestAmerica Orlando

8010 Sunport Drive Suite 116
Orlando, FL 32809
Phone (800) 851-2560 Fax (407) 856-0886

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

7/26/2012

Client Information		Sampler: <i>Chad Thompson / Bob Cussew</i>	Lab PM: <i>Bechtold, Chad</i>	Carrier Tracking No(s):	COC No: <i>640-33719-9179.2</i>	
Client Contact: Quang Nguyen		Phone: <i>407-872-6893</i>	E-Mail: <i>chad.bechtold@testamericainc.com</i>		Page: <i>Page 2 of 2</i>	
Company: HSW Engineering, Inc.					Job #: <i>640-33719-9179.2</i>	
Address: 605 E. Robinson St. Suite 308		Due Date Requested: <i>Standard TAT</i>	Analysis Requested			
City: Orlando		TAT Requested (days): <i>Standard TAT</i>				
State, Zip: FL, 32801						
Phone: 904-825-3828(Tel)		PO #: 4800010541				
Email: qnguyen@hsweng.com		WO #: 7AS300803				
Project Name: NG - St. Augustine		Project #: 64001680				
Site:		SSOW#:				
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=tissue, A=air)	
				Field Filtered Sample (Yes or No)	Total Number	
				Preservation Codes (MSD/SDS Yes or No)	Special Instructions/Note:	
RFI - S7		07-11-12	12:46	G	GW	N X A A
RFI - S10			14:19			N X
RFI - S9			15:16			N X
RFI - S16			16:06			N X
RFI - S17			16:53			N X
RFI - S13			17:41			N XX
Equipment Blank - 1			18:10		W	N XX
FD - 1			-		GW	N XX
Trip Blank			-		-	X
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements:
Empty Kit Relinquished by: <i>PSH</i>		Date: <i>7/6/12</i>	Time: <i>800</i>	Method of Shipment: <i>2/0</i>		
Relinquished by: <i>PSH</i>	Date/Time: <i>07-12-12 (09:30)</i>	Company: <i>HSW</i>	Received by: <i>BW/H</i>	Date/Time: <i>7/12/12 11:25</i>	Company: <i>TR</i>	
Relinquished by: <i>PSH</i>	Date/Time: <i></i>	Company: <i></i>	Received by: <i>TM</i>	Date/Time: <i>7/13/12 9:10</i>	Company: <i>TR</i>	
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.: <i></i>	Outer Temperature(s) °C and Other Remarks: <i>1.4°C</i>				



490513

Orlando

Login Sample Receipt Checklist

Client: Northrop Grumman Corp.

Job Number: 640-39444-1

Login Number: 39444

List Source: TestAmerica Tallahassee

List Number: 1

Creator: Delp, Eric

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Northrop Grumman Corp.

Job Number: 640-39444-1

Login Number: 39444

List Source: TestAmerica Tampa

List Number: 1

List Creation: 07/17/12 11:33 AM

Creator: Snead, Joshua

Question	Answer	Comment	
Radioactivity either was not measured or, if measured, is at or below background	True		1
The cooler's custody seal, if present, is intact.	True		2
The cooler or samples do not appear to have been compromised or tampered with.	True		3
Samples were received on ice.	True		4
Cooler Temperature is acceptable.	True		5
Cooler Temperature is recorded.	True		6
COC is present.	True		7
COC is filled out in ink and legible.	True		8
COC is filled out with all pertinent information.	True		9
Is the Field Sampler's name present on COC?	True		10
There are no discrepancies between the sample IDs on the containers and the COC.	True		11
Samples are received within Holding Time.	True		12
Sample containers have legible labels.	True		13
Containers are not broken or leaking.	True		14
Sample collection date/times are provided.	True		15
Appropriate sample containers are used.	True		
Sample bottles are completely filled.	True		
Sample Preservation Verified.	True		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True		
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True		
Multiphasic samples are not present.	True		
Samples do not require splitting or compositing.	True		
Residual Chlorine Checked.	N/A		



APPENDIX D

GROUNDWATER SAMPLING LOGS/FIELD FORMS

FIELD REPORT SUMMARY

SUBMIT ORIGINAL FIELD LOGS TO THE HSW QA/QC FILE
IF SAMPLES COLLECTED, WELLS INSTALLED, OR
WELLS ABANDONED.

Page 1 of _____
(total pages in field packet)

PROJECT NO.: 7AS 300811

TASK: 004

IDENTIFIER: 1316

PROJECT NAME: N G - SAMC

SITE ADDRESS: 5000 North US 1, St. Augustine, FL

PROJECT MANAGER: FAS, QN

FIELD PERSONNEL: CMT, RGC

DATE(S) OF WORK: 07-11-12

TYPE OF WORK	INSTRUMENT(S) USED Model/Serial No.	Instrument			
		Calibration	Performance	A = Acceptable	U = Unacceptable
Water Level Measurements	Water Level Probe No. 1 HSW electric sounder	A	A	✓	
Groundwater Sampling	Water Level Probe No. 2	U	U		
Recovery Well Sampling	Water Level Probe No. 3	A	A	✓	
System Sampling	Multiparameter Meter YSI MPS 556 cyclops (SN# 24111101015)	U	U		
Soil Sampling	Multiparameter Meter	A	A	✓	
Sediment Sampling	Turbidity Meter Lumette 2020c (ME 12705)	U	U		
Surface Water Sampling	Turbidity Meter	A	A	✓	
Well Installation/Drilling	Sampling Pump	A	A	✓	
Soil Borings	Sampling Pump	A	A	✓	
DPT Installation/Sampling	FID	A	A	✓	
Pumping Test	PID	A	A	✓	
O&M	Explosimeter	A	A	✓	
Construction	Product Interface Probe	A	A	✓	
Other - describe below	Surface Water Flow Probe	A	A	✓	
	Other -	A	A	✓	

Note: Multiparameter meter, pH, conductivity, DO, turbidity, and ORP meter calibration data provided on the Equipment Calibration & Performance Summary form.

OBSERVATIONS/COMMENTS:

- Collect Water Levels
- Collect GW Samples: RFI-S7, S10, S9, S16, S17, S13
- Re-drillment: RFI-S8, MW-1

HEALTH & SAFETY (check one):

No health and safety accidents/incidents occurred.

One or more health and safety accidents/incidents occurred. And Accident/Incident Report is attached
(must be included with this Field Report Summary)

Table 4. Water Levels
January and July 2012

* RFF-BGWT2

exterior metal casing bent from car collision
5°-10° SW

S = Sampled

Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center

Well Number	Well Depth (ft bwc)	Screened Interval (ft bsls)	Casing Elevation (ft above NGVD)	X -Coordinate	Y -Coordinate	Depth to Water 1/24/12	Water Elevation (ft above NGVD) 1/24/12	Total Depths 1/24/12	Depth to Water 7/11/12	Water Elevation (ft above NGVD) 7/11/12	Total Depths 7/11/12
Background											
RFI-BGWT1	15	2.5 - 15	12.63	546694.70	2044948.28	7.54	5.09	17.89	5.34		17.87
RFI-BGS1	30	20 - 30	12.54	546694.66	2044952.28	7.45	5.09	32.80	5.26		32.84
RFI-BGWT2	15	2.5 - 15	13.87	547398.71	2043846.38	7.96	5.91	17.65	6.38		17.66
RFI-BGS2	30	20 - 30	13.91	547398.71	2043846.38	8.15	5.76	32.28	6.50		32.30
RFI-BGWT3	15	2.5 - 15	11.59	547764.24	2044313.88	6.47	5.12	17.58	5.73		17.60
RFI-BGS3	30	20 - 30	11.80	547762.93	2044318.69	6.74	5.06	32.30	5.83		32.08
Facility											
RFI-WT1	15	2.5 - 15	10.65	547176.65	2046082.63	6.80	3.85	18.12	5.39		18.10
RFI-S1	30	20 - 30	10.25	547178.14	2046078.01	6.76	3.49	32.88	4.97		32.97
RFI-WT2	15	2.5 - 15	10.42	547066.66	2045749.90	6.68	3.74	14.72	5.52		14.54
RFI-S2	30	20 - 30	10.63	547063.20	2045755.28	6.86	3.77	32.50	5.64		32.50
RFI-WT3	15	2.5 - 15	12.37	546958.64	2045524.75	8.23	4.14	14.97	6.86		12.89
RFI-S3	30	20 - 30	12.39	546964.17	2045525.90	8.42	3.97	33.09	6.98		33.05
RFI-WT4	15	2.5 - 15	12.33	-	-	-	-	-	-		
RFI-S4	30	20 - 30	12.44	547086.32	2045560.92	8.45	3.99	32.69	6.98		32.72
RFI-WT5	15	2.5 - 15	11.33	547124.61	2045576.85	*4	-	5.03			
RFI-S5	30	20 - 30	-	-	-	7.57	-	32.30			
RFI-S6	30	20 - 30	10.36	547209.73	2045529.30	6.61	3.75	32.60	5.14		32.60
RFI-S7	30	20 - 30	11.21	547235.40	2045498.85	7.45	3.76	32.13	5.76		32.10
RFI-WT8	15	2.5 - 15	9.10	547191.87	2045402.97	5.62	3.48	15.29	4.17		15.25
RFI-S8	30	20 - 30	9.02	547190.99	2045405.00	5.54	3.48	26.52	4.08		26.56
RFI-WT9	15	2.5 - 15	10.33	547154.07	2045308.62	6.53	3.80	15.30	4.87		15.32
RFI-S9	30	20 - 30	10.28	547160.25	2045309.87	6.38	3.90	29.73	4.91		29.70
RFI-WT10	15	2.5 - 15	11.03	547276.66	2045362.01	8.07	2.96	18.03	6.56		18.06
RFI-S10	30	20 - 30	10.96	547271.80	2045359.98	8.70	2.26	32.90	7.28		32.96
RFI-WT11	15	2.5 - 15	8.99	547429.12	2045427.03	5.03	3.96	14.81	3.41		14.85
RFI-S11	30	20 - 30	8.89	547430.95	2045420.44	4.90	3.99	29.78	3.35		29.80
RFI-WT12	15	2.5 - 15	9.77	546906.61	2045016.96	5.27	4.50	14.81	3.43		14.80
RFI-S12	30	20 - 30	9.76	546900.35	2045015.41	5.38	4.38	30.20	3.75		30.18
RFI-WT13	15	2.5 - 15	10.34	547101.19	2045114.45	5.41	4.93	14.37	3.89		19.36
RFI-S13	30	20 - 30	10.32	547096.87	2045115.10	6.08	4.24	29.91	4.62		29.94
RFI-WT14	15	2.5 - 15	9.65	547126.82	2044758.47	4.38	5.27	14.67	3.44		
RFI-S14	30	20 - 30	9.76	547128.32	2044762.50	4.33	5.43	30.01	3.54		29.99
RFI-WT15	15	2.5 - 15	10.17	547215.62	2044920.29	5.40	4.77	14.80	4.20		14.80
RFI-S15	30	20 - 30	10.15	547216.83	2044917.03	4.70	5.45	30.38	4.28		30.30
RFI-WT16	15	2.5 - 15	11.35	547345.17	2045096.45	6.62	4.73	17.86	5.76		17.85
RFI-S16	30	20 - 30	11.17	547344.70	2045101.80	6.89	4.28	32.75	5.57		32.74
RFI-WT17	15	2.5 - 15	11.73	547435.01	2044923.18	6.49	5.24	17.78	6.06		17.80
RFI-S17	30	20 - 30	11.77	547436.07	2044930.19	7.26	4.51	32.80	6.01		32.80
RFI-S18	30	20 - 30	9.36	547133.90	2044648.25	4.09	5.27	29.14	2.67		29.11
RFI-WT19	15	2.5 - 15	8.88	547305.25	2044745.43	3.94	4.94	15.45	2.74		15.40
RFI-S19	30	20 - 30	8.94	547309.15	2044746.67	4.32	4.62	30.05	2.85		30.03
RFI-WT21	15	2.5 - 15	9.87	547034.43	2046191.04	6.10	3.77	17.94	5.11		17.80
RFI-S21	30	20 - 30	9.87	547032.41	2046194.17	6.17	3.70	32.07	5.32		32.01
RFI-WT22	15	2.5 - 15	11.27	-	-	7.79	3.48	17.95	7.58		18.00
RFI-S22	30	20 - 30	11.41	-	-	7.96	3.45	29.03	7.72		29.10
RFI-WT23	15	2.5 - 15	8.76	546806.19	2045747.30	3.84	4.92	14.26	3.53		14.24
RFI-S23	30	20 - 30	8.76	546806.19	2045747.30	3.93	4.83	29.08	3.58		29.10
SWMUS / MW1	14.5	2.5 - 14.5	10.65	547170.99	2045918.12	6.98	3.67	18.00	5.39		18.03
SWMUS / MW2	14.5	2.5 - 14.5	11.44	547111.00	2045960.32	7.90	3.54	18.03	6.52		18.06
SWMUT / MW1	14.5	2.5 - 14.5	11.41	547235.38	2045497.85	7.57	3.84	18.02	5.46		18.02
AOC-B / MW1	14.5	2.5 - 14.5	10.64	547204.16	2045690.29	7.00	3.64	17.08	5.39		17.11
AOC-B / MW2	14.5	2.5 - 14.5	10.79	547214.00	2045515.00	7.14	3.65	18.00	5.53		17.98
RW-4	35	5 - 35	7.87	547307.87	2045836.71	12.95	-5.08	13.55 ¹²	6.04		13.65
RW-6	35	5 - 35	9.54	547297.99	2045473.07	13.16	-3.62	23.80 ¹¹	12.52		21.46
BW-1	20.03	--	10.96	547731.61	2045158.11	5.44	5.52	20.10	4.78		20.11
BW-2	40.78	17.3-37.3	10.67	547524.20	2045309.62	5.58	5.09	40.92	4.98		40.97
PZ-S1	30	20-30	8.92	547710.81	2045259.70	3.40	5.52	29.85	2.82		29.88
PZ-S2	30	20-30	9.34	547710.81	2045259.70	3.83	5.51	29.66	3.50		29.70
PZ-WT3	15	5-15	9.21	-	-	3.70	5.51	14.73	3.38		14.75
MW-1	17.7	4.8-14.8	10.22	547307.75	2045796.30	5.91	4.31	14.33	5.17		14.80
NDW-1	100.5	--	8.97	547589.19	2045775.26	3.04	5.93	98.02	1.92		98.00
AW-2A	18	5-15	10.55	547492.81	2045906.87	5.48	5.07	18.27	4.63		18.34
AW-2B	39.1	--	9.92	547492.81	2045906.87	-	-	-	--		--
AW-8A ³	14.45	--	8.52	--	--	-	-	-	--		--
AW-8B ³	23.52	15-35	7.51	--	--	-	-	-	--		--
AW-10A	15.21	3-13	10.15	457414.04	2046038.43	6.21	3.94	14.88	4.35		14.94
AW-10B	35.25	17-37	10.96	457414.04	2046038.43	7.06	3.90	40.08	5.32		40.02

* Well next to WT5 (East of WT5) TD 32.27 DTW 6.21 - Well not on map (S5)?

* WT5 well broken - unable to get DTW or TD - WL meter stuck downhole

* AW2B well TOC stuck inside outer casing - unable to remove

* Well East of MW-1 TD 20.02 DTW 5.67 near RW-4

Form FD 9000-24
GROUNDWATER SAMPLING LOG

1316

SITE NAME: Northrop Grumman		SITE LOCATION: St. Augustine, Florida	
WELL NO: RFI-S7		SAMPLE ID: RFI-S7	DATE: 07-11-12

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 20 feet to 30 feet	STATIC DEPTH TO WATER (feet): 5.77	PURGE PUMP TYPE OR BAILER: PP
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WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable) = (feet - feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable) = 0.01 gallons + (0.0014 gallons/foot X 40 feet) + 0.15 gallons = 0.22 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 12:15	PURGING ENDED AT: 12:46	TOTAL VOLUME PURGED (gallons): 1.0
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TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)	G R P
12:25	0.3	0.3	0.03	5.85	6.19	26.43	491	1.63	20.1	clear	No	-172.1
12:28	0.1	0.4	0.03	5.85	6.22	26.40	495	1.52	14.3	"	"	-173.4
12:31	0.1	0.5	0.03	5.85	6.15	26.32	497	1.50	6.04	"	"	-172.1
12:34	0.1	0.6	0.03	5.85	6.14	26.23	499	1.47	5.80	"	"	-173.1
12:37	0.1	0.7	0.03	5.85	6.11	26.17	502	1.40	4.77	"	"	-167.6
12:40	0.1	0.8	0.03	5.85	6.10	26.11	503	1.37	5.99	"	"	-168.1
12:43	0.1	0.9	0.03	5.85	6.10	26.10	506	1.36	4.34	"	"	-166.2
12:46	0.1	1.0	0.03	5.85	6.09	26.08	505	1.35	4.17	"	"	-165.9

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HSD <i>Chad Thompson/Bob Casper</i>	SAMPLER(S) SIGNATURE(S): <i>CDR</i>	SAMPLING INITIATED AT: 12:46	SAMPLING ENDED AT: 13:00						
PUMP OR TUBING DEPTH IN WELL (feet): 25	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y N	FILTER SIZE: _____ μm Filtration Equipment Type:						
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N							
SAMPLE CONTAINER SPECIFICATION		SAMPLE PRESERVATION							
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
RFI-S7	3	CG	40mL	HCL	—	—	VOCs 8260	RFPP	<100mL/min

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump;
RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24
GROUNDWATER SAMPLING LOG

SITE NAME: Northrop Grumman	SITE LOCATION: St. Augustine, Florida
WELL NO: RFI-S9	SAMPLE ID: RFI-S9

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 20 feet to 30 feet	STATIC DEPTH TO WATER (feet): 4.91	PURGE PUMP TYPE OR BAILER: PP
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WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (feet - feet) X **PI** **HALF CELL VOLUME** gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME

$$= 0.01 \text{ gallons} + (0.0014 \text{ gallons/foot} \times 40 \text{ feet}) + 0.15 \text{ gallons} = 0.22 \text{ gallons}$$

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25 FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25 PURGING INITIATED AT: 14:45 PURGING ENDED AT: 15:16 TOTAL VOLUME PURGED (gallons): 1.0

WELL CAPACITY (Gallons Per Foot): $0.75'' = 0.02$; $1'' = 0.04$; $1.25'' = 0.06$; $2'' = 0.16$; $3'' = 0.37$; $4'' = 0.65$; $5'' = 1.02$; $6'' = 1.47$; $12'' = 5.88$

TUBING INSIDE DIA. CAPACITY (Gall. hr.) **WELL** **CLOSURE** **PURGING EQUIPMENT CODES:** **R** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump;
PFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units Temperature: $\pm 0.2^\circ\text{C}$ Specific Conductance: $\pm 5\%$ Dissolved Oxygen: all readings $\leq 20\%$ saturation (see Table FS 22) Turbidity: all readings < 20 NTU; optionally $+ 5$ NTU or $+ 10\%$ (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24
GROUNDWATER SAMPLING LOG

#1316

SITE NAME: Northrop Grumman		SITE LOCATION: St. Augustine, Florida	
WELL NO: RFI-S10		SAMPLE ID: RFI-S10	

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 20 feet to 30 feet	STATIC DEPTH TO WATER (feet): 7.30	PURGE PUMP TYPE OR BAILER: PP
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WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet - feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.01 gallons + (0.0014 gallons/foot X 40 feet) + 0.15 gallons = 0.22 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 13:45	PURGING ENDED AT: 14:19	TOTAL VOLUME PURGED (gallons): 1.1
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TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) (mg/l or % saturation)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)	O R P
13:55	0.3	0.3	0.03	7.35	7.06	27.83	446	0.80	22.4	clear	no	-152.3
13:58	0.1	0.4	0.03	7.35	7.06	27.80	438	0.76	14.3	"	"	-153.4
14:01	0.1	0.5	0.03	7.35	6.93	27.77	439	0.75	12.3	"	"	-152.7
14:04	0.1	0.6	0.03	7.35	6.92	27.73	436	0.72	8.80	"	"	-152.8
14:07	0.1	0.7	0.03	7.35	6.89	27.70	433	0.70	7.40	"	"	-152.7
14:10	0.1	0.8	0.03	7.35	6.88	27.68	430	0.68	6.40	"	"	-146.8
14:13	0.1	0.9	0.03	7.35	6.87	27.62	429	0.67	5.90	"	"	-150.3
14:16	0.1	1.0	0.03	7.35	6.80	27.60	428	0.65	5.92	"	"	-147.8
14:19	0.1	1.1	0.03	7.35	6.83	27.59	427	0.65	5.90	"	"	-149.3

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HSW <i>Chad Thompson, Bob Cassise</i>	SAMPLER(S) SIGNATURE(S): <i>CR</i>	SAMPLING INITIATED AT: 14:19	SAMPLING ENDED AT: 14:26						
PUMP OR TUBING DEPTH IN WELL (feet): 25	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y N	FILTER SIZE: _____ μm						
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N							
SAMPLE CONTAINER SPECIFICATION		SAMPLE PRESERVATION							
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
RFI-S10	3	CG	40mL	HCL	—	—	VOCs 8260	ICPAP	<100mL/min

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump;
RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24
GROUNDWATER SAMPLING LOG

#F1316

SITE NAME: Northrop Grumman		LOCATION: St. Augustine, Florida	
WELL NO: RFI-S13		SAMPLE ID: RFI-S13	DATE: 07-11-12

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 20 feet to 30 feet	STATIC DEPTH TO WATER (feet): 4.61	PURGE PUMP TYPE OR BAILER: PP
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WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet - feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

$$= 0.01 \text{ gallons} + (0.0014 \text{ gallons/foot} \times 40 \text{ feet}) + 0.15 \text{ gallons} = 0.22 \text{ gallons}$$

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 17:10	PURGING ENDED AT: 17:41	TOTAL VOLUME PURGED (gallons): 1.0
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TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or 1/S/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)	O R P
17:20	0.3	0.3	0.03	4.68	7.15	30.31	782	0.53	11.6	clear	No	-20.3
17:23	0.1	0.4	0.03	4.68	7.10	30.33	782	0.52	10.04	"	"	-211.4
17:26	0.1	0.5	0.03	4.68	7.09	30.34	780	0.50	3.77	"	"	-212.3
17:29	0.1	0.6	0.03	4.68	7.08	30.39	780	0.49	3.83	"	"	-213.7
17:32	0.1	0.7	0.03	4.68	7.07	30.40	783	0.40	3.57	"	"	-208.8
17:35	0.1	0.8	0.03	4.68	7.06	30.42	783	0.37	3.47	"	"	-207.5
17:38	0.1	0.9	0.03	4.68	7.07	30.43	784	0.35	3.06	"	"	-206.9
17:41	0.1	1.0	0.03	4.68	7.08	30.45	785	0.35	2.99	"	"	-205.1

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HSW Chad Thompson Bon Cargese	SAMPLER(S) SIGNATURE(S): <i>HSW</i> <i>Chad Thompson</i>	SAMPLING INITIATED AT: 17:41	SAMPLING ENDED AT: 18:03
--	--	---------------------------------	-----------------------------

PUMP OR TUBING DEPTH IN WELL (feet): 25	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	FILTER SIZE: _____ μm
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FIELD DECONTAMINATION: PUMP Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	TUBING Y <input checked="" type="checkbox"/> N <input type="checkbox"/> (replaced)	DUPLICATE: Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
--	--	---

SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
RFI-S13	3	CG	40mL	HCL	—	—	VOCs 8260	RFP
RFI-S13	3	CG	40mL	HCL	—	—	1,4-Dioxane	RFP
FD-1	3	CG	40mL	HCL	—	—	VOCs 8260	RFP
FD-1	3	CG	40mL	HCL	—	—	1,4-Dioxane	RFP

REMARKS:	FD-1 collected at RFI-S13 07-11-12 (17:41) 1,4 Dioxane + 8260
	Equipment Blank -1 collected near RFI-S13 (18:10) 07-11-12 1,4 Dioxane + 8260

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump;
RFP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24
GROUNDWATER SAMPLING LOG

#1316

SITE NAME: Northrop Grumman		SITE LOCATION: St. Augustine, Florida	
WELL NO: RFI-S16		SAMPLE ID: RFI-S16	DATE: 07-11-12

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 20 feet to 30 feet	STATIC DEPTH TO WATER (feet): 5.58	PURGE PUMP TYPE OR BAILER: PP
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WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

$$= (\quad \text{feet} - \quad \text{feet}) \times \quad \text{gallons/foot} = \quad \text{gallons}$$

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

$$= 0.01 \text{ gallons} + (0.0014 \text{ gallons/foot} \times 40 \text{ feet}) + 0.15 \text{ gallons} = 0.22 \text{ gallons}$$

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 15:35	PURGING ENDED AT: 16:06	TOTAL VOLUME PURGED (gallons): 1.0
--	--	--------------------------------	----------------------------	---------------------------------------

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)	O R P
15:45	0.3	0.3	0.03	5.66	7.02	26.72	663	0.62	7.40	clear	no	1337
15:48	0.1	0.4	0.03	5.66	7.00	26.72	662	0.60	5.80	"	"	-134.7
15:51	0.1	0.5	0.03	5.68	7.01	26.75	662	0.52	3.40	"	"	-140.1
15:54	0.1	0.6	0.03	5.66	6.98	26.77	660	0.50	1.08	"	"	-141.2
15:57	0.1	0.7	0.03	5.66	6.97	26.77	659	0.47	0.70	"	"	-132.9
16:00	0.1	0.8	0.03	5.66	6.93	26.78	660	0.46	0.80	"	"	-130.4
16:03	0.1	0.9	0.03	5.66	6.90	26.80	659	0.45	0.88	"	"	-129.7
16:06	0.1	1.0	0.03	5.66	6.88	26.80	658	0.44	0.93	"	"	-128.3

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Hsw Chad Thompson, Bob Cassere	SAMPLER(S) SIGNATURE(S): <i>Hsw RCassere</i>	SAMPLING INITIATED AT: 16:06	SAMPLING ENDED AT: 16:15						
PUMP OR TUBING DEPTH IN WELL (feet): 25	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Filtration Equipment Type:	FILTER SIZE: _____ μm						
FIELD DECONTAMINATION: PUMP Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	TUBING Y <input checked="" type="checkbox"/> N <input type="checkbox"/> (replaced)	DUPLICATE: Y <input checked="" type="checkbox"/> N <input type="checkbox"/>							
SAMPLE CONTAINER SPECIFICATION		SAMPLE PRESERVATION							
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
RFI-S16	3	CG	40mL	HCL	—	—	VOCs 8260	RFPP	<100mL/min

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump;
RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24
GROUNDWATER SAMPLING LOG

#1316

SITE NAME: Northrop Grumman		SITE LOCATION: St. Augustine, Florida	
WELL NO: RFI-S17	SAMPLE ID: RFI-S17		DATE: 07-11-12

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 20 feet to 30 feet	STATIC DEPTH TO WATER (feet): 6.06	PURGE PUMP TYPE OR BAIRER: PP
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WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= () feet - feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

$$= 0.01 \text{ gallons} + (0.0014 \text{ gallons/foot} \times 40 \text{ feet}) + 0.15 \text{ gallons} = 0.22 \text{ gallons}$$

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25 FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25 PURGING INITIATED AT: 16:22 PURGING ENDED AT: 16:53 TOTAL VOLUME PURGED (gallons): 1.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) $\mu\text{mhos/cm}$ or $\mu\text{S/cm}$	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
16:32	0.3	0.3	0.03	6.15	7.17	26.78	884	0.70	17.1	Clear	No -147.8
16:35	0.1	0.4	0.03	6.15	7.18	26.83	890	0.62	14.9	"	" -146.3
16:38	0.1	0.5	0.03	6.15	7.13	26.90	892	0.60	13.7	"	" -147.3
16:41	0.1	0.6	0.03	6.15	7.14	26.99	893	0.53	6.80	"	" -148.1
16:44	0.1	0.7	0.03	6.15	7.20	27.02	894	0.50	7.90	"	" -142.7
16:47	0.1	0.8	0.03	6.15	7.22	27.03	897	0.47	6.42	"	" -144.7
16:50	0.1	0.9	0.03	6.15	7.23	27.05	900	0.46	5.17	"	" 145.3
16:53	0.1	1.0	0.03	6.15	7.25	27.08	902	0.45	6.03	"	" -145.8

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: HSW <i>Chad Thompson, Bob Cassese</i>	SAMPLER(S) SIGNATURE(S) <i>[Signature]</i>	SAMPLING INITIATED AT: 16:53	SAMPLING ENDED AT: 17:00						
PUMP OR TUBING DEPTH IN WELL (feet): 25	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y <input checked="" type="checkbox"/>	FILTER SIZE: <input type="text"/> μm						
FIELD DECONTAMINATION: PUMP Y <input checked="" type="checkbox"/>	TUBING Y <input checked="" type="checkbox"/> (replaced)	DUPPLICATE: Y <input checked="" type="checkbox"/>							
SAMPLE CONTAINER SPECIFICATION		SAMPLE PRESERVATION							
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
RFI-S17	3	CG	40mL	HCL	—	—	VOCs 8260	RFP	<100mL/min

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump;
RFP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units Temperature: $\pm 0.2^\circ\text{C}$ Specific Conductance: $\pm 5\%$ Dissolved Oxygen: all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, $\pm 0.2 \text{ mg/L}$ or $\pm 10\%$ (whichever is greater) Turbidity: all readings $\leq 20 \text{ NTU}$; optionally $\pm 5 \text{ NTU}$ or $\pm 10\%$ (whichever is greater)

Revision Date: February 12, 2009

FIELD DUPLICATE, BLANK, AND EQUIPMENT DECONTAMINATION SUMMARY



7AS300811

Project No. / Task

1316

Identifier

CMT/RGC

Sampling Personnel

NG - St. Augustine SAMC

Project Name / Location

07-11-12

Date(s)

A. FIELD DUPLICATES (FDEP SOPs FQ 1220 and FQ 1230)

Date	Time	Location	Duplicate ID	Comments
07-11-12	17:41	RFI-S13	FD-1	1,4 Dioxane 8260 SIM 8260C vOA + VOlS

B. EQUIPMENT BLANKS (FDEP SOPs FQ 1211, FQ 1212, and FQ 1230)

Date	Time	Location	GW	SW	SL	SD	OT	Comments
07-11-12	18:10	RFI-S13					✓	OT = AFw (water) Test America Lab supplied

C. FIELD BLANKS (FDEP SOPs FQ 1214 and FQ 1230)

Date	Time	Location	GW	SW	SL	SD	OT	Comments
—	—	—	—	—	—	—	—	—

D. TRIP BLANKS (FDEP SOPs FQ 1213 and FQ 1230)

Date	Time	Location	GW	SW	SL	SD	OT	Comments
—	—	—	—	—	—	—	—	Test America supplied 8260C vOA + VOlS 1,4 Dioxane trip blanks

E. EQUIPMENT DECONTAMINATION (FDEP SOP FC 1000)

Date	Time	Location	GW	SW	SL	SD	OT	Equipment

Where indicated, specify the matrix to which the blank or decontamination applies by checking the appropriate box. OT means other.



EQUIPMENT CALIBRATION AND PERFORMANCE SUMMARY

NG-St-Augustine SAME / 7A5300811 / 064 / 1316

Project Name Project No. Task / Identifier

CMT / RGC /

Sampling Personnel

YSI 556 YSI-556 cyclone Roto/ 1110K100957

Instrument

Model

Serial #

Turbidimeter LaMotte 2020e / ME12705

Instrument

Model

Serial #

Acceptance Criteria	
pH	+/- 0.2 S.U.
COND	+/- 5 %
DO (true value from table)	+/- 0.3 mg/L
TURB	0.1-10 NTU
TURB	11-40 NTU
TURB	41-100 NTU
TURB	> 100 NTU

Sample ID	True Value	Precalibration Reading	pH (S.U.)	Sp Conductance (uS/cm)	DO (mg/L)	Temperature °C	TURB (NTU)	Date	Time	Pass/Fail (circle one)
pH IC 1	4.01	—	—					—	—	
pH IC 2	7.00	—	—					—	—	
pH IC 3	10.00	—	—					—	—	
pH ICV 1	—							—	—	P F
pH CCV 1	4.01		3.98					07-11-12	05:12	(P) F
pH CCV 2	10.01		10.02					07-11-12	05:44	(P) F
pH CCV 3	7.00		7.03					07-11-12	22:10	(P) F
COND IC 1	—	—	—					—	—	
COND ICV	—							—	—	P F
COND CCV 1	84			83				07-11-12	05:48	(P) F
COND CCV 2	1500			1514				07-11-12	06:00	(P) F
COND CCV 3	1500			1511				07-11-12	22:15	(P) F
DO IC	—	—	—	—	—	—	—	—	—	
DO ICV	—							—	—	P F
DO CCV 1	8.294				8.30	24.78		07-11-12	05:40	(P) F
DO CCV 2	8.279				8.28	24.92		07-11-12	22:08	(P) F
DO CCV 3								—	—	P F
TURB IC 1	—	—	—	—	—	—	—	—	—	
TURB IC 2	—	—	—	—	—	—	—	—	—	
TURB IC 3	—	—	—	—	—	—	—	—	—	
TURB ICV	20							—	—	P F
TURB CCV 1	0.02						0.01	07-11-12	06:10	(P) F
TURB CCV 2	20.0						19.9	07-11-12	06:14	(P) F
TURB CCV 3	20.0						20.1	07-11-12	22:29	(P) F

Calibration Standards

	pH (S.U.)			Conductivity (uS/cm)			Turbidity (NTU)		
True Value	4.01	7.00	10.00	84	1500	0.02	10.0	20.0	
Lot #	2007238	00654-04	654-08	00653-16	00653-15	0639/0640	C147379	A1352	
Expir. Date	06-2012	06-2012	12-2012	7-2012	02-2013	03-2014	03-2013	12-2013	

00654-06 00654-04

03-2014 09-2013

ORP 07-11-12 (06:18) 230.4 24.89°C (P) F
 07-11-12 (22:30) 229.7 25.17°C (P) F

TestAmerica Orlando

8010 Sunport Drive Suite 116
Orlando, FL 32809
Phone (800) 851-2560 Fax (407) 856-0866

Chain of Custody Record

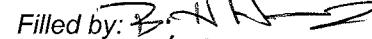
TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: <i>Chad Thompson / Bob Lusser</i>	Lab PM: Bechtold, Chad	Carrier Tracking No(s):	COC No: 640-33719-9179.2			
Client Contact: Quang Nguyen		Phone: 407-872-6893	E-Mail: chad.bechtold@testamericainc.com		Page: Page 2 of 2			
Company: HSW Engineering, Inc.					Job #:			
Address: 605 E. Robinson St. Suite 308		Due Date Requested: Standard TAT	Analysis Requested			Preservation Codes:		
City: Orlando		TAT Requested (days): Standard TAT				8260C - VOH+VOA		8260C - SIM - 1,4-Dioxane
State, Zip: FL, 32801		PO #: 4800010541				Other:		
Phone: 904-825-3828(Tel)		WO #: 7AS300803						
Email: qnguyen@hweng.com		Project #: 64001680						
Project Name: NG - St. Augustine		Site: SSOW#:						
Sample Identification		Sample Date 07-11-12	Sample Time 12:46	Sample Type (C=comp, G=grab) G	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) GW	Field Filtered/Sample (Ref. on No.)	Total Number of containers	Special Instructions/Note:
RFI - S7						X		
RFI - S10			14:19			N	X	
RFI - S9			15:16			N	X	
RFI - S16			16:06			N	X	
RFI - S17			16:53			N	X	
RFI - S13			17:41			N	XX	
Equipment Blank - 1			18:10		W	N	XX	
FD - 1			—		GW	N	XX	
Trip Blank			—	—	—	L	X	
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client	<input type="checkbox"/> Disposal By Lab	<input type="checkbox"/> Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements:		
Empty Kit Relinquished by: <i>PSH</i>		Date: 7/16/12	Time: 509	Method of Shipment: 2/0				
Relinquished by: <i>PSH</i>		Date/Time: 07-12-12 (09:30)	Company: HSW	Received by: <i>PSH</i>	Date/Time: 7/12/12 @ 1125	Company:		
Relinquished by:		Date/Time:	Company:	Received by:	Date/Time:	Company:		
Relinquished by:		Date/Time:	Company:	Received by:	Date/Time:	Company:		
Custody Seals Intact: △ Yes △ No		Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks: 1.4°C			

Bottle Order Information

Bottle Order: NG - St. Augustine - GW 7/4
 Bottle Order #: 9179
 Date Order Posted: 7/5/2012 12:32:29PM
 Order Status: Ready To Process
 Prepared By: Noel Savoie
Deliver By Date: 7/10/2012 11:59:00PM
 Lab Project Number: 64001680

Order Completion Information

Filled by: 
 Sent Date: 7/6/12
 Sent Via: DHL
 Tracking #:

Sets	Bottles/Set	Qty	Bottle Type Description	Preservative	Method	Matrix	Sample Type	Comments	Lot #
7	3	21	Voa Vial 40ml - Hydrochloric Acid	Hydrochloric Acid	8260C - VOH+VOA	Water	Normal		
4	3	12	Voa Vial 40ml - Hydrochloric Acid	Hydrochloric Acid	8260C_SIM - 1,4-Dioxane	Water	Normal		
1	3	3	Voa Vial 40ml - Hydrochloric Acid	Hydrochloric Acid	8260C - VOH+VOA	Water	Trip Blank		
1	3	3	Voa Vial 40ml - Hydrochloric Acid	Hydrochloric Acid	8260C_SIM - 1,4-Dioxane	Water	Trip Blank		

Notes to Field Staff:**Health and Safety Notes:**

Preservative	Comment
Hydrochloric Acid	CAUTION! CONTAINS 1:1 HYDROCHLORIC ACID. Avoid skin and eye contact. If contact is made, FLUSH IMMEDIATELY with water.

Relinquished By	Company	Date	Time	Received By	Company	Seal #: Seal #: Seal #:
Relinquished By	Company	Date	Time	Received By	Company	Seal #: Seal #: Seal #:

Please notify us immediately if an error is found in shipment

Shipping Order Form

TestAmerica Orlando

8010 Sunport Drive Suite 116

Orlando, FL 32809

Phone (800) 851-2560 Fax (407) 856-0886

Shipping Order ID: 33719**Ship Via: Lab Courier****Due On: 7/10/2012****Ship To Information***Project Manager: Chad Bechtold**Company Name: HSW Engineering, Inc.**Attention: Attn: Quang Nguyen**Address 1: 605 E. Robinson St.**Address 2: Suite 308**Address 3:**City: Orlando**State: FL**Zip: 32801**Phone #: 407-872-6893**Project Ref: NG - St. Augustine***Notes to Bottle/Shipping Department**

Please include 2 Liters of DI water with the sample kits.

 Rebill Freight Labels on Coolers**Shipping Assets**

Assets	Quantity	Description	Filled
			<input checked="" type="checkbox"/>

Please notify us immediately if an error is found in shipment



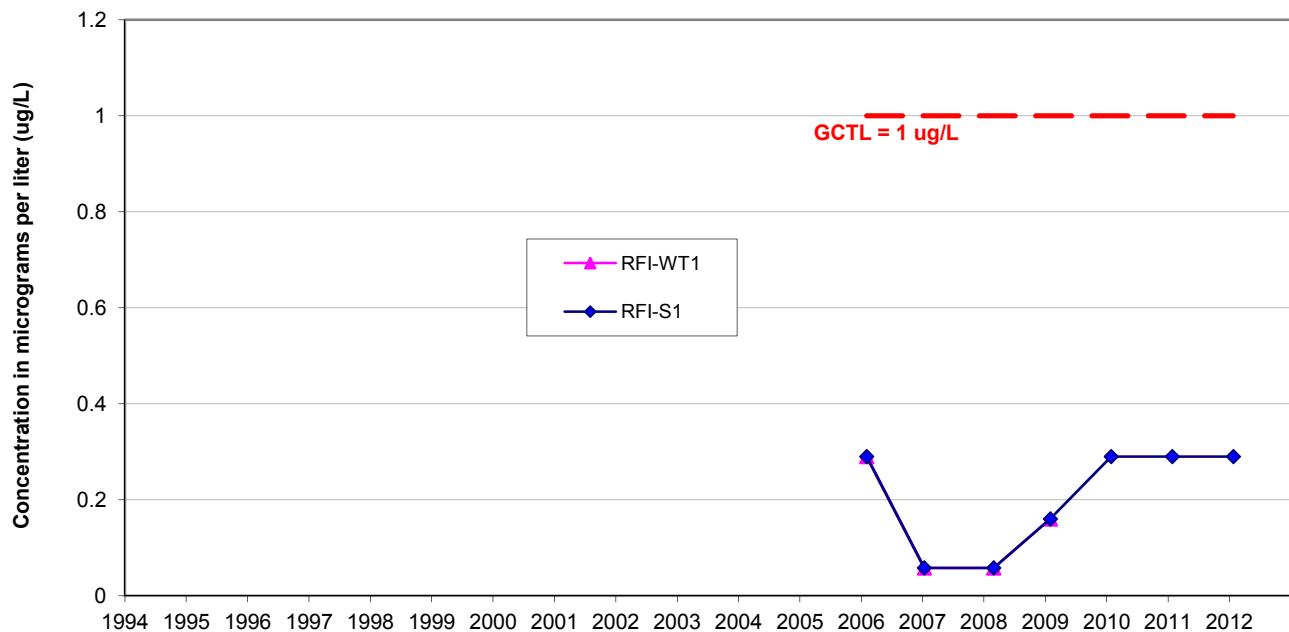
APPENDIX E

GROUNDWATER CONCENTRATION TREND PLOTS

Concentrations of Vinyl Chloride and 1,4-Dioxane

Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center

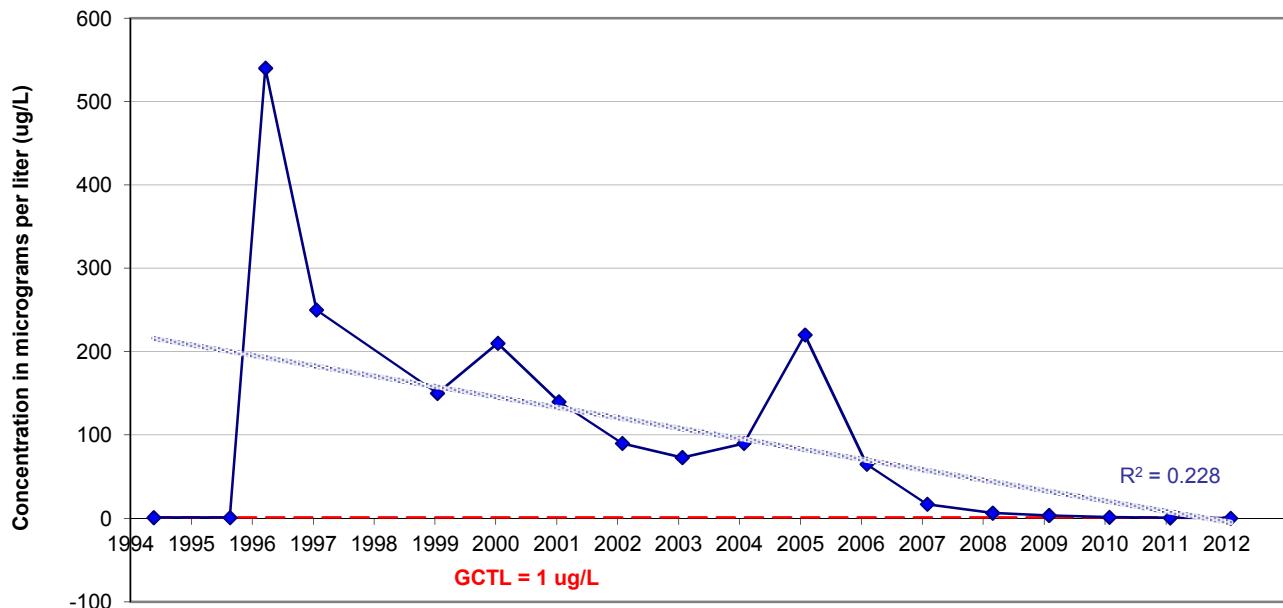
RFI-WT1 and RFI-S1 Vinyl Chloride - January 2012



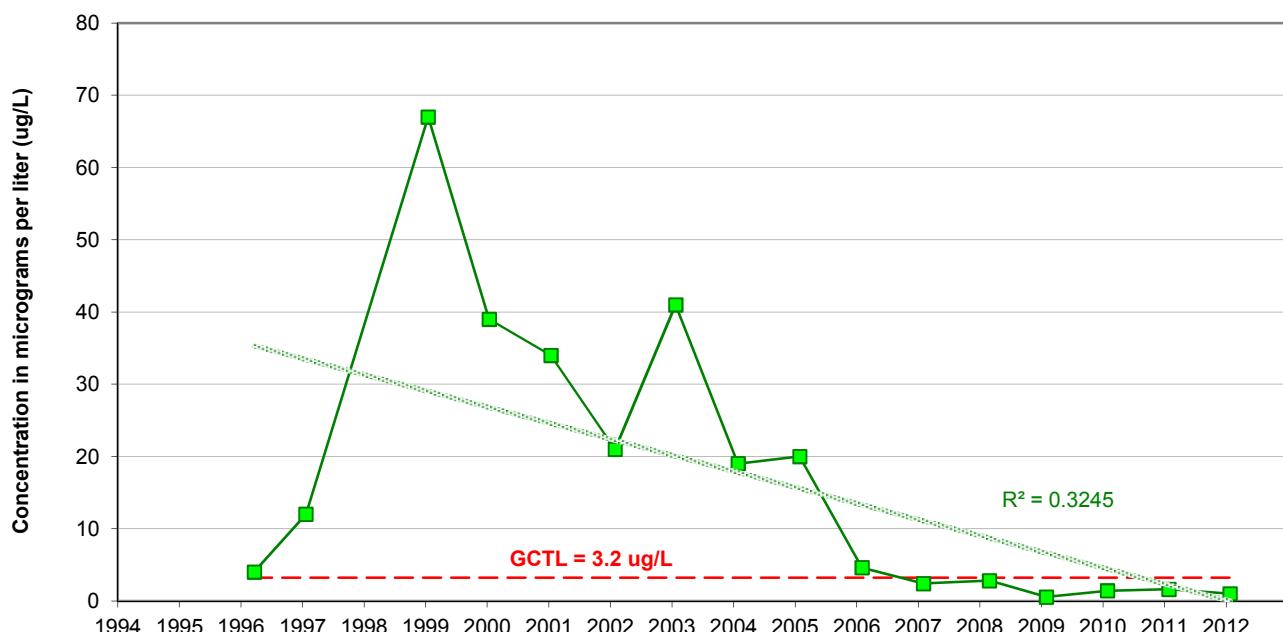
Concentrations of Vinyl Chloride and 1,4-Dioxane

**Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center**

RFI-S6 Vinyl Chloride - January 2012



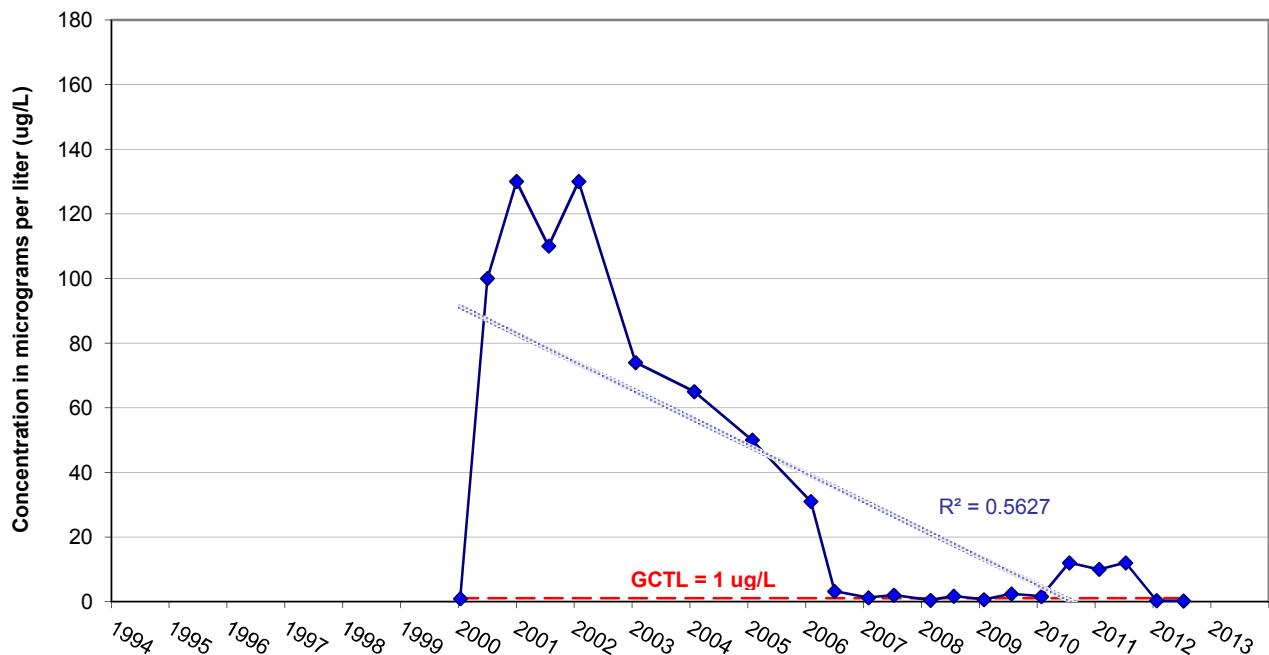
RFI-S6 1,4-Dioxane - January 2012



Concentrations of Vinyl Chloride and 1,4-Dioxane

Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center

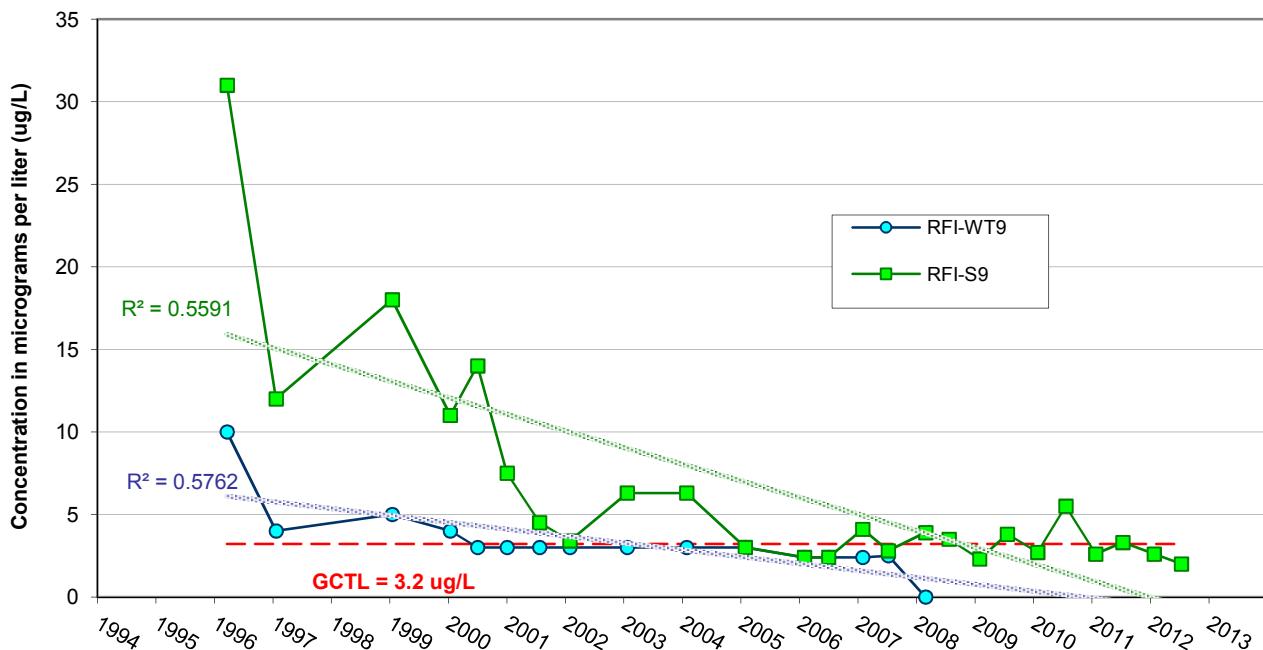
RFI-S7
Vinyl Chloride - July 2012



Concentrations of Vinyl Chloride and 1,4-Dioxane

**Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center**

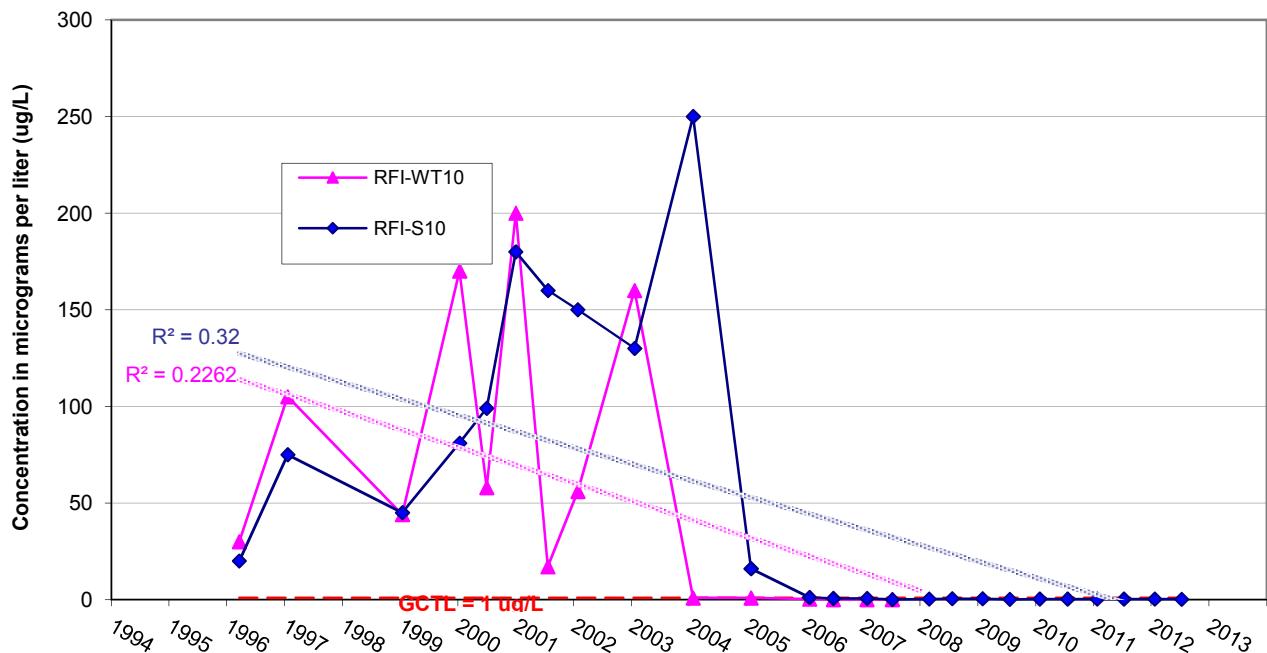
**RFI-WT9 and RFI-S9
1,4-Dioxane - July 2012**



Concentrations of Vinyl Chloride and 1,4-Dioxane

**Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center**

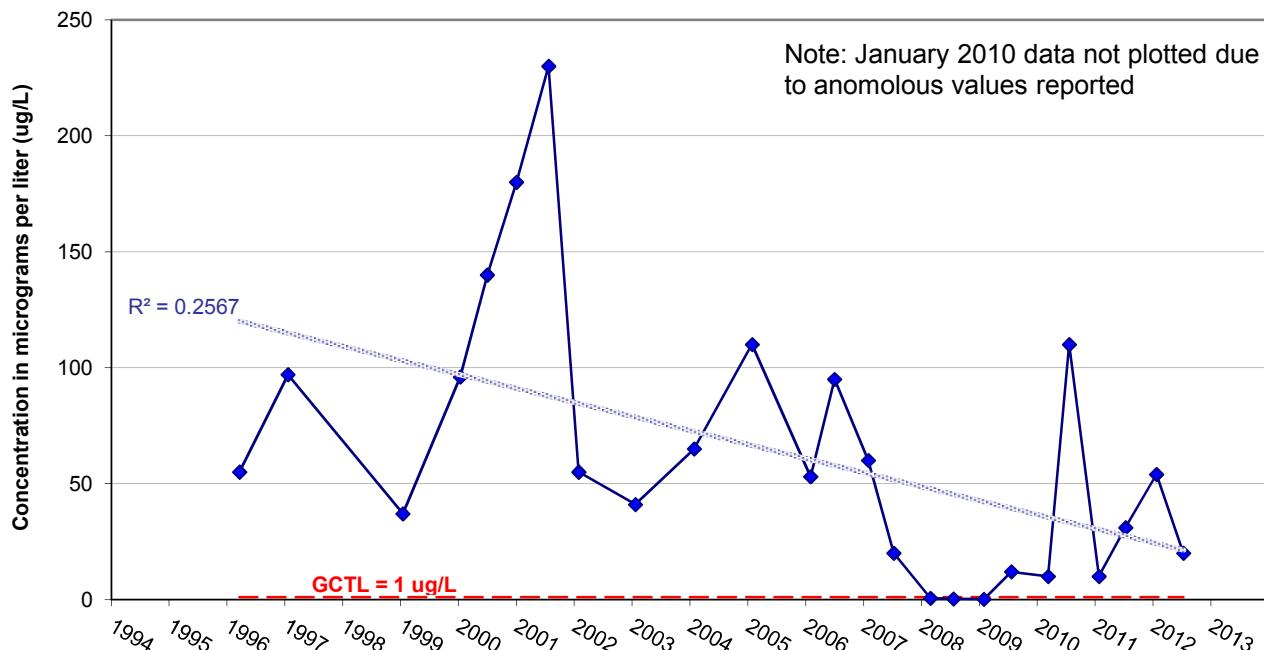
RFI-WT10 and RFI-S10 Vinyl Chloride - July 2012



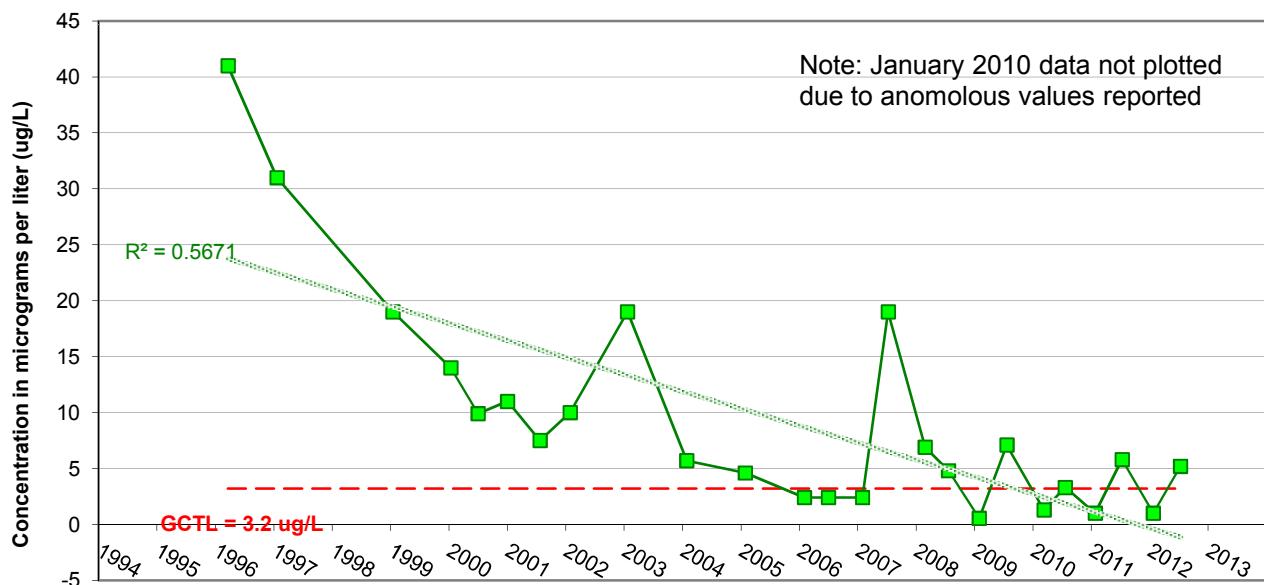
Concentrations of Vinyl Chloride and 1,4-Dioxane

**Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center**

**RFI-S13
Vinyl Chloride - July 2012**



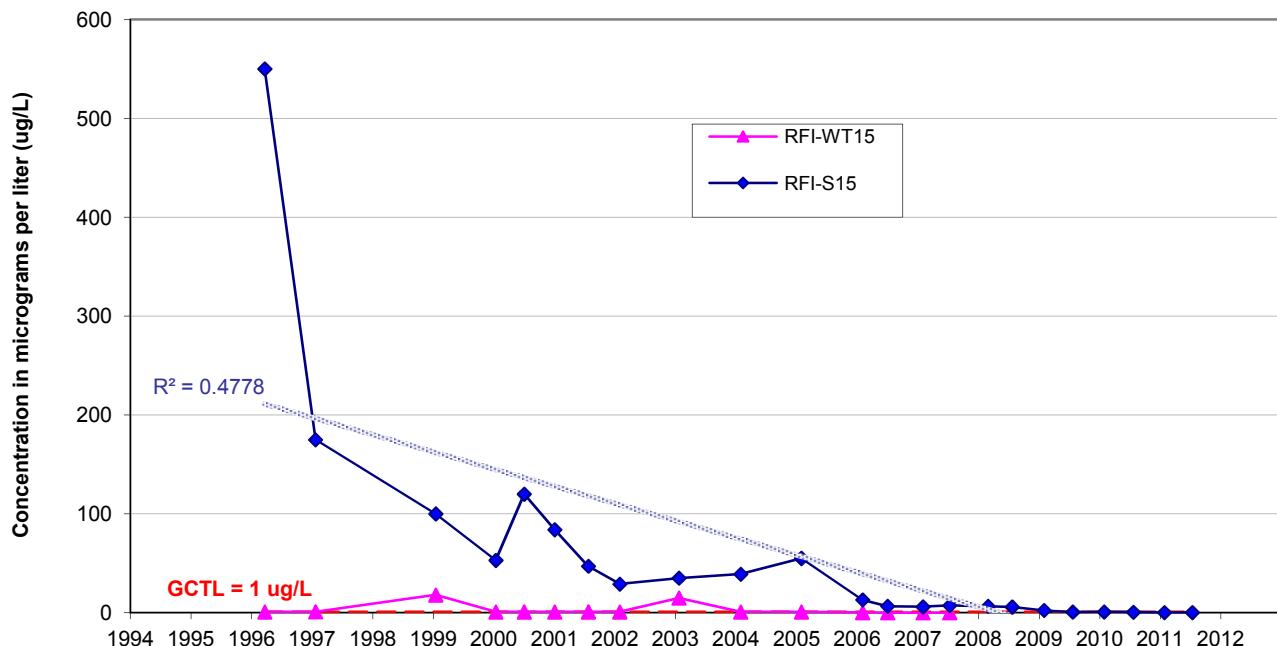
**RFI-S13
1,4-Dioxane - July 2012**



Concentrations of Vinyl Chloride and 1,4-Dioxane

Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center

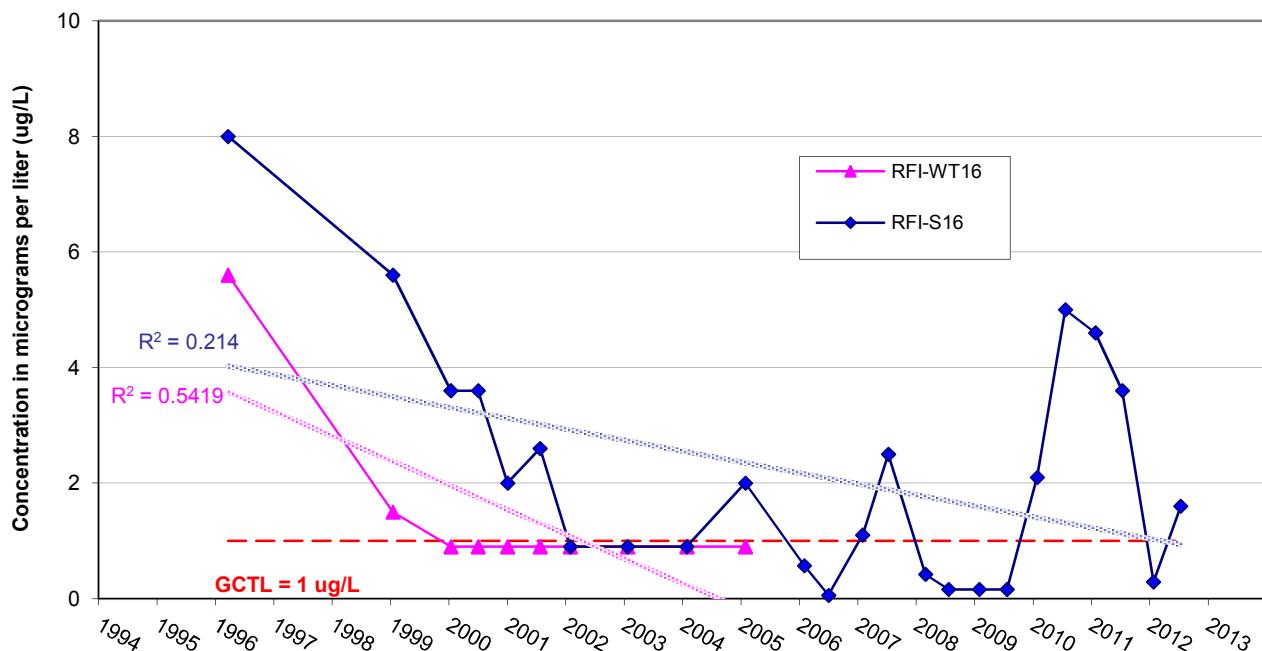
RFI-WT15 and RFI-S15
Vinyl Chloride - January 2011



Concentrations of Vinyl Chloride and 1,4-Dioxane

**Northrop Grumman Systems Corporation
St. Augustine Manufacturing Center**

RFI-WT16 and RFI-S16 Vinyl Chloride - July 2012



RFI-WT17 and RFI-S17 Vinyl Chloride - July 2012

